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ABSTRACT

This book contains proceedings from legislation designed to improve public awareness about the health effects of smoking. The texts of both proposed bills on the Comprehensive Smoking Prevention Education Act are included. Testimony of citizens and health experts is provided that relates personal experiences as well as medical evidence dealing with smoking and cancer and heart and lung disease. Statements from representatives of the tobacco industry question the need for the bills and the issues of strengthening the present cigarette warning label and cigarette advertising. The role of the federal government in stimulating smoking research is also discussed. (JAC)

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COMPREHENSIVE SMOKING PREVENTION EDUCATION ACT

HEARINGS

BEFORE THE

SUBCOMMITTEE ON HEALTH AND THE ENVIRONMENT

OF THE

COMMITTEE ON ENERGY AND COMMERCE HOUSE OF REPRESENTATIVES

NINETY-SEVENTH CONGRESS

SECOND SESSION

ON

H.R. 5653 and H.R. 4957

BILLS TO AMEND THE PUBLIC HEALTH SERVICE ACT AND THE FEDERAL CIGARETTE LABELING AND ADVERTISING ACT TO ESTABLISH A NATIONAL PROGRAM UNDER AN OFFICE OF SMOKING AND HEALTH TO INFORM THE PUBLIC OF THE DANGERS FROM SMOKING, TO CHANGE THE LABEL REQUIREMENTS FOR CIGARETTES, AND FOR OTHER PURPOSES

MARCH 5, 11, AND 12, 1982

Serial No. 97-106

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COMPREHENSIVE SMOKING PREVENTION EDUCATION ACT

FRIDAY, MARCH 5, 1982

House of Representatives,
Subcommittee on Health and the Environment,
Committee on Energy and Commerce,
Washington, D.C.

The subcommittee met, pursuant to call, at 9:50 a.m., in room 2123, Rayburn House Office Building, Hon. Henry A. Waxman (chairman) presiding.

Mr. **Waxman**. The meeting of the subcommittee will come to order.

This morning the subcommittee will receive testimony on H.R. 4957 and H.R. 5653, legislation designed to improve public awareness about the health effects of smoking.

I doubt there are many Americans, including smokers, who don't know the admonition "Warning: The Surgeon General has determined that cigarette smoking is dangerous to your health." This warning is now required on all cigarette packages and advertising and has been the focal point of the Federal Government's smoking education campaign for over a decade.

During this period we have learned much about smoking and its effect on human health. In fact, the Surgeon General's 1979 report on smoking characterized the weight of scientific evidence against smoking as overwhelming.

Just last week Surgeon General C. Everett Koop issued a chilling report which documented clear, convincing evidence about the relationship between smoking and our most feared disease—cancer.

The report provides a further confirmation of the tragic fact that smoking is the single most preventable cause of death and illness in this country.

The known facts about smoking and health are many: Smoking can reduce life expectancy by as much as 8 years. It dramatically increases the risk of cancer, and lung and heart disease. It can increase the possibility of high-risk births or even fetal death. For women using oral contraceptives, smoking substantially increases the risk of heart attack and stroke.

As I see it, there are two aspects to this legislation.

First, it is my belief that the present cigarette warning label is not as effective as it could or should be. It should be strengthened. It should be replaced by a series of health warnings which express the facts about smoking and health in a clear, straightforward manner.

The health warnings should be displayed on cigarette packages, but more importantly they should be displayed on cigarette advertising.

It is clear to me that the sophisticated imagery used in cigarette company advertisements are dangerously misleading. The health concerns about smoking are undermined by images and myths that fit into the marketing strategies of the tobacco industry.

Our second purpose this morning is to determine the appropriate Federal role in stimulating greater research on smoking as well as working with the voluntary health sector to promote smoking education and prevention.

I believe this is a critically important role for the Federal Government. Establishment in statute of an Office on Smoking and Health will provide the necessary stability to assure continuation of the Department of Health and Human Services' important activities in this area.

Today is the first of three hearings on the Comprehensive Smoking Prevention Education Act. What we ultimately decide will signal the commitment of this Congress with respect to health promotion and disease prevention.

Before recognizing our witnesses, I would like to ask that copies of H.R. 4957 and H.R. 5653 and a list of cosponsors be printed in the hearing record. Without objection, that will be the order.

[The text of the bills and cosponsors follows:]

I

97TH CONGRESS
2D SESSION

H. R. 5653

To amend the Public Health Service Act and the Federal Cigarette Labeling and Advertising Act to establish a national program under an Office of Smoking and Health to inform the public of the dangers from smoking, to change the label requirements for cigarettes, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

MARCH 1, 1982

Mr. WAXMAN introduced the following bill; which was referred to the Committee on Energy and Commerce

---

A BILL

To amend the Public Health Service Act and the Federal Cigarette Labeling and Advertising Act to establish a national program under an Office of Smoking and Health to inform the public of the dangers from smoking, to change the label requirements for cigarettes, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Comprehensive Smoking Prevention Education Act of 1982".

SEC. 2. The Congress finds that—

(1) cigarette smoking is the largest preventable cause of illness and premature death in the United States and is associated with the unnecessary deaths of over three hundred thousand Americans annually;

(2) smoking is the number one cause of lung cancer in the United States and is the major cause of chronic obstructive lung diseases such as emphysema;

(3) heart disease accounts for nearly one half of the deaths in this country and one third of these deaths are attributable to smoking;

(4) pregnant women who smoke are at a higher risk for the possibility of spontaneous abortion, still births, premature births, and child weight deficiencies;

(5) women who take birth control pills and smoke are more likely to suffer a heart attack or stroke than women who don't smoke;

(6) certain occupational hazards in conjunction with an individual's smoking increase substantially the risk of disease and death;

(7) present Federal, State, and private initiatives have been insufficient in conveying these health messages to the American public;

(8) it is estimated that cigarette smoking related deaths and disabilities result in $25,800,000,000 annu-

ally in lost productivity to the United States economy and $13,600,000,000 in medical costs; and

(9) because of the above findings, a new strategy should be undertaken to educate and provide information to the American public to allow them to make informed decisions as to whether or not they should smoke.

SEC. 3. (a) Title XVII of the Public Health Service Act is amended by adding at the end the following:

"SMOKING AND HEALTH

"SEC. 1711. (a) There is established in the Department of Health and Human Services the Office of Smoking and Health (hereinafter in this section referred to as the 'Office') which shall be under the Assistant Secretary for Health. The Secretary shall appoint a Director to head the Office.

"(b) The Secretary, acting through the Office, shall establish and administer a program to inform the public of the dangers to human health presented by cigarette smoking. In carrying out the program the Secretary shall—

"(1) coordinate all research and educational programs and other activities within the Department which relate to the effect of cigarette smoking on human health and coordinate, through the Interagency Committee on Smoking and Health, such activities with similar activities of other Federal agencies;

"(2) establish and maintain a liaison with appropriate private entities, other Federal agencies, and State and local public agencies respecting activities relating to the effect of cigarette smoking on human health;

"(3) conduct research on the effect of cigarette smoking on human health, develop materials for informing the public of such effect, and provide assistance for education programs on smoking and health;

"(4) collect, analyze, and disseminate (through publications, bibliographies, and otherwise) information, studies, and other data relating to the effect of cigarette smoking on human health, coordinate the development of materials on smoking and health, and develop standards, criteria, and methodologies for improved information programs related to smoking and health; and

"(5) compile and make available information on State and local laws relating to the sale, distribution, use, and consumption of cigarettes.

The Secretary may carry out paragraph (3) directly and through grants.

"(c) To carry out the coordination activities under the program established under subsection (b) there is established an Interagency Committee on Smoking and Health to be composed of one representative from each of the following: The Federal Trade Commission, the Department of Education, the Department of Labor, and any other Federal agency designated by the Secretary. The Committee shall meet at least four times each year and the Director of the Office of Smoking and Health shall serve as the Chairman of the Committee.

"(d) The Secretary, acting through the Office, shall transmit a report to Congress not later than January 1 of each year which shall contain—

"(1) current information on the health consequences of smoking;

"(2) an overview of the activities of the Office during the previous year and an assessment of the Federal activities undertaken to inform the public of the health consequences of smoking; and

"(3) such recommendations for legislation as the Secretary may consider appropriate.".

(b) Section 1701(b) of the Public Health Service Act (42 U.S.C. 300u(b)) is amended by striking out "and 1709" and inserting in lieu thereof "1709, and 1711".

(c) The amendment made by subsection (a) shall take effect October 1, 1982.

SEC. 4. (a) Section 4 of the Federal Cigarette Labeling and Advertising Act (15 U.S.C. 1333) is amended to read as follows:

"LABELING

"SEC. 4. (a)(1) It shall be unlawful for any person to manufacture, package, import, or export for sale or distribution any cigarettes the package of which fails to bear, in accordance with the requirements of subsection (b), one of the label statements listed in the following paragraphs:

"(A) For information on the Specific Dangers of cigarette smoking, write to the Surgeon General, United States Public Health Service, Washington, District of Columbia 20201.

"(B) Warning: Cigarette smoking is the number one cause of Emphysema and Lung Cancer.

"(C) Warning: Cigarette smoking is a major cause of Heart Disease.

"(D) Smokers: No matter how long you have smoked, quitting now greatly reduces the risks to your health.

"(E) Warning: Cigarette smoking by pregnant women may result in Birth Defects or Spontaneous Abortion.

"(F) Warning: Cigarette smoking may cause Death from heart disease, cancer, or emphysema.

"(G) Warning: Cigarette smoking is addictive and will injure your health.

"(2) It shall be unlawful for any person to manufacture, package, import, or export for sale or distribution any cigarettes the package of which fails to bear, in accordance with regulations promulgated under subsection (b), a label which identifies any chemical substances the intended use of which results or may reasonably be expected to result, directly or indirectly, in its becoming a component or otherwise affecting the characteristics of the cigarettes. The Federal Trade Commission shall promulgate regulations prescribing the form of the label required by this paragraph.

"(3) It shall be unlawful for any person to advertise any cigarette unless the advertising bears, in accordance with the requirements of subsection (b), a label statement listed in paragraphs (1) and (2).

"(b) The Federal Trade Commission shall establish a system under which—

"(1) each brand of cigarettes and the advertising for each brand of cigarettes shall, in each seven-year period beginning after the system is made applicable to it, bear each of the label statements listed in subsection (a)(1), "(2) no brand of cigarettes or its advertising shall bear one of the label statements listed in subsection (a)(1) for a period greater than one year,

"(3) in any year, each label statement listed in subsection (a)(1) shall appear on substantially the same number of brands as determined under the system,

"(4) the label statements shall be located in a conspicuous place on each cigarette package and in each cigarette advertising and shall appear in conspicuous and legible type in contrast by typography, layout, and color with all other printed or background material on the package or in the advertising, and

"(5) the label statements on packages of cigarettes for export from the United States shall be printed in the principal language of the country to which the cigarettes are exported.

"(c) It shall be unlawful for any person to manufacture, package, import, or export for sale or distribution any cigarettes the package and advertising of which fails to disclose the level of—

"(1) tar,

"(2) nicotine, and

"(3) carbon monoxide,

produced by the cigarette when smoked. The level of tar, nicotine, and carbon monoxide shall be based on the levels established annually by the Federal Trade Commission.".

(b) Section 5(a) of such Act (15 U.S.C. 1334) is amended by inserting before the period the following: "or in any cigarette advertising".

(c) Section 7 of such Act (15 U.S.C. 1336) is amended—

(1) by striking out subsection (a),

(2) by striking out "Except as provided in subsection (a), nothing" in subsection (b) and inserting in lieu thereof "Nothing", and

(3) by redesignating subsections (b) and (c) as subsections (a) and (b), respectively.

(d) Section 8 of such Act (15 U.S.C. 1337) is amended by striking out subsection (a) and by striking out "(b)".

(e) Section 9 of such Act (15 U.S.C. 1338) is amended by striking out "$10,000" and inserting in lieu thereof "$100,000".

(f) Section 10 of such Act (15 U.S.C. 1339) is amended by inserting "(a)" after "Sec. 10." and by adding at the end the following:

"(b)(1) Except as provided in paragraph (2), any person may commence a civil action against any person who is alleged to be in violation of section 4 or 6 to restrain such violation. Any civil action under this paragraph shall be brought in the United States district court for the district in which the alleged violation occurred or in which the defendant resides or in which the defendant's principal place of business is located. The district courts of the United States shall have jurisdiction over suits brought under this paragraph without regard to the amount in controversy or the citizenship of the parties. In any civil action under this paragraph, process may be served on a defendant in any judicial district in which the defendant resides or may be found and subpoenas for witnesses may be served in any judicial district.

"(2) No civil action may be commenced under paragraph (1) to restrain a violation of section 4 or 6—

"(A) before the expiration of sixty days after the plaintiff has given notice of such violation (i) to the Federal Trade Commission, and (ii) to the person who is alleged to have committed such violation, or

"(B) if the Attorney General has commenced and is diligently prosecuting a civil action in a court of the United States to require compliance with section 4 or 6, but if such proceeding or civil action is commenced after the giving of notice, any person giving such notice may intervene as a matter of right in such proceeding or action.

Notice under this paragraph shall be given in such manner as the Federal Trade Commission shall prescribe by rule.

"(3)(A) In any action under paragraph (1), the Federal Trade Commission, if not a party, may intervene as a matter of right.

"(B) The court, in issuing any final order in any action brought pursuant to paragraph (1), may award costs of suit and reasonable fees for attorneys and expert witnesses if the court determines that such an award is appropriate. Any court, in issuing its decision in an action brought to review such an order, may award costs of suit and reasonable fees for attorneys if the court determines that such an award is appropriate.

"(C) Nothing in this section shall restrict any right which any person (or class of persons) may have under any statute or common law to seek enforcement of section 4 or 6 or to seek any other relief.

"(D) When two or more civil actions brought under paragraph (1) involving the same defendant and the same issues or violations are pending in two or more judicial districts, such pending actions, upon application of such defendants to such actions which is made to a court in which any such action is brought may, if such court in its discretion so decides, be consolidated for trial by order (issued after giving all parties reasonable notice and opportunity to be heard) of such court and tried in—

"(i) any district which is selected by such defendant and in which one of such actions is pending,

"(ii) a district which is agreed upon by stipulation between all the parties to such actions and in which one of such actions is pending, or

"(iii) a district which is selected by the court and in which one of such actions is pending.

The court issuing such an order shall give prompt notification of the order to the other courts in which the civil actions consolidated under the order are pending.".

(g) Section 11 of such Act (15 U.S.C. 1340) is repealed and section 12 of such Act is redesignated as section 11.

SEC. 5. The amendments made by section 4 shall take effect upon the expiration of the one-year period beginning on the date of the enactment of this Act. During such one-year period, the Federal Trade Commission shall promulgate such regulations as may be necessary to implement the amendments made by section 4 on their effective date.

97TH CONGRESS
1ST SESSION

H. R. 4957

To amend the Public Health Service Act and the Federal Cigarette Labeling and Advertising Act to establish a national program under an Office of Smoking and Health to inform the public of the dangers from smoking, to change the label requirements for cigarettes, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

NOVEMBER 12, 1981

Mr. WAXMAN introduced the following bill; which was referred to the Committee on Energy and Commerce

---

A BILL

To amend the Public Health Service Act and the Federal Cigarette Labeling and Advertising Act to establish a national program under an Office of Smoking and Health to inform the public of the dangers from smoking, to change the label requirements for cigarettes, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Comprehensive Smoking Prevention Education Act of 1981".

SEC. 2. The Congress finds that—

20

(1) cigarette smoking is the largest preventable cause of illness and premature death in the United States and is associated with the unnecessary deaths of over three hundred thousand Americans annually;

(2) smoking is the number one cause of lung cancer in the United States and is the major cause of chronic obstructive lung diseases such as emphysema;

(3) heart disease accounts for nearly one half of the deaths in this country and one third of these deaths are attributable to smoking;

(4) pregnant women who smoke are at a higher risk for the possibility of spontaneous abortion, still births, premature births, and child weight deficiencies;

(5) women who take birth control pills and smoke are more likely to suffer a heart attack or stroke than women who don't smoke;

(6) certain occupational hazards in conjunction with an individual's smoking increase substantially the risk of disease and death;

(7) present Federal, State, and private initiatives have been insufficient in conveying these health messages to the American public;

(8) it is estimated that cigarette smoking related deaths and disabilities result in $25,800,000,000 annu-

ally in lost productivity to the United States economy and $13,600,000,000 in medical costs; and

(9) because of the above findings, a new strategy should be undertaken to educate and provide information to the American public to allow them to make informed decisions as to whether or not they should smoke.

SEC. 3. (a) Title XVII of the Public Health Service Act is amended by adding at the end the following:

"SMOKING AND HEALTH

"SEC. 1711. (a) There is established in the Department of Health and Human Services the Office of Smoking and Health (hereinafter in this section referred to as the 'Office') which shall be under the Assistant Secretary for Health. The Secretary shall appoint a Director to head the Office.

"(b) The Secretary, acting through the Office, shall establish and administer a program to inform the public of the dangers to human health presented by cigarette smoking. In carrying out the program the Secretary shall—

"(1) coordinate all research and educational programs and other activities within the Department which relate to the effect of cigarette smoking on human health and coordinate, through the Interagency Committee on Smoking and Health, such activities with similar activities of other Federal agencies;

"(2) establish and maintain a liaison with appropriate private entities, other Federal agencies, and State and local public agencies respecting activities relating to the effect of cigarette smoking on human health;

"(3) conduct research on the effect of cigarette smoking on human health, develop materials for informing the public of such effect, and provide assistance for education programs on smoking and health;

"(4) collect, analyze, and disseminate (through publications, bibliographies, and otherwise) information, studies, and other data relating to the effect of cigarette smoking on human health, coordinate the development of materials on smoking and health, and develop standards, criteria, and methodologies for improved information programs related to smoking and health; and

"(5) compile and make available information on State and local laws relating to the sale, distribution, use, and consumption of cigarettes.

The Secretary may carry out paragraph (3) directly and through grants.

"(c) To carry out the coordination activities under the program established under subsection (b) there is established an Interagency Committee on Smoking and Health to be composed of one representative from each of the following: The Federal Trade Commission, the Department of Education, the Department of Labor, and any other Federal agency designated by the Secretary. The Committee shall meet at least four times each year and the Director of the Office of Smoking and Health shall serve as the Chairman of the Committee.

"(d) The Secretary, acting through the Office, shall transmit a report to Congress not later than January 1 of each year which shall contain—

"(1) current information on the health consequences of smoking;

"(2) an overview of the activities of the Office during the previous year and an assessment of the Federal activities undertaken to inform the public of the health consequences of smoking; and

"(3) such recommendations for legislation as the Secretary may consider appropriate.".

(b) Section 1701(b) of the Public Health Service Act (42 U.S.C. 300u(b)) is amended by striking out "and 1709" and inserting in lieu thereof "1709, and 1711".

SEC. 4. (a) Section 4 of the Federal Cigarette Labeling and Advertising Act (15 U.S.C. 1333) is amended to read as follows:

"LABELING

"SEC. 4. (a)(1) It shall be unlawful for any person to manufacture, package, import, or export for sale or distribution any cigarettes the package of which fails to bear, in accordance with the requirements of subsection (b), one of the label statements listed in the following paragraphs:

"(A) For information on the Specific Dangers of cigarette smoking, write to the Surgeon General, United States Public Health Service, Washington, District of Columbia 20201.

"(B) Warning: Cigarette smoking is the number one cause of Emphysema and Lung Cancer.

"(C) Warning: Cigarette smoking is a major cause of Heart Disease.

"(D) Smokers: No matter how long you have smoked, quitting now greatly reduces the risks to your health.

"(E) Warning: Cigarette smoking by pregnant women may result in Birth Defects or Spontaneous Abortion.

"(F) Warning: Cigarette smoking may cause Death from heart disease, cancer, or emphysema.

"(2) It shall be unlawful for any person to advertise any cigarette unless the advertising bears, in accordance with the requirements of subsection (b), a label statement listed in paragraph (1).

"(b) The Federal Trade Commission shall establish a system under which—

"(1) each brand of cigarettes and the advertising for each brand of cigarettes shall, in each six-year period beginning after the system is made applicable to it, bear each of the label statements listed in subsection (a)(1),

"(2) no brand of cigarettes or its advertising shall bear one of the label statements listed in subsection (a)(1) for a period greater than one year,

"(3) in any year, each label statement listed in subsection (a)(1) shall appear on substantially the same number of brands as determined under the system,

"(4) the label statements shall be located in a conspicuous place on each cigarette package and in each cigarette advertising and shall appear in conspicuous and legible type in contrast by typography, layout, and color with all other printed or background material on the package or in the advertising, and

"(5) the label statements on packages of cigarettes for export from the United States shall be printed in the principal language of the country to which the cigarettes are exported.

"(c) It shall be unlawful for any person to manufacture, package, import, or export for sale or distribution any cigarettes the package and advertising of which fails to disclose the level of—

"(1) tar,

"(2) nicotine, and

"(3) carbon monoxide,

produced by the cigarette when smoked. The level of tar, nicotine, and carbon monoxide shall be based on the levels established annually by the Federal Trade Commission.".

(b) Section 5(a) of such Act (15 U.S.C. 1334) is amended by inserting before the period the following: "or in any cigarette advertising".

(c) Section 7 of such Act (15 U.S.C. 1336) is amended—

(1) by striking out subsection (a),

(b) by striking out "Except as provided in subsection (a), nothing" in subsection (b) and inserting in lieu thereof "Nothing", and

(3) by redesignating subsections (b) and (c) as subsections (a) and (b), respectively.

(d) Section 8 of such Act (15 U.S.C. 1337) is amended by striking out subsection (a) and by striking out "(b)".

(e) Section 9 of such Act (15 U.S.C. 1338) is amended by striking out "$10,000" and inserting in lieu thereof "$100,000".

(f) Section 10 of such Act (15 U.S.C. 1339) is amended by inserting "(a)" after "Sec. 10." and by adding at the end the following:

"(b)(1) Except as provided in paragraph (2), any person may commence a civil action against any person who is alleged to be in violation of section 4 or 6 to restrain such violation. Any civil action under this paragraph shall be brought in the United States district court for the district in which the alleged violation occurred or in which the defendant resides or in which the defendant's principal place of business is located. The district courts of the United States shall have jurisdiction over suits brought under this paragraph without regard to the amount in controversy or the citizenship of the parties. In any civil action under this paragraph, process may be served on a defendant in any judicial district in which the defendant resides or may be found and subpoenas for witnesses may be served in any judicial district.

"(2) No civil action may be commenced under paragraph (1) to restrain a violation of section 4 or 6—

"(A) before the expiration of sixty days after the plaintiff has given notice of such violation (i) to the

Federal Trade Commission, and (ii) to the person who is alleged to have committed such violation, or

"(B) if the Attorney General has commenced and is diligently prosecuting a civil action in a court of the United States to require compliance with section 4 or 6, but if such proceeding or civil action is commenced after the giving of notice, any person giving such notice may intervene as a matter of right in such proceeding or action.

Notice under this paragraph shall be given in such manner as the Federal Trade Commission shall prescribe by rule.

"(3)(A) In any action under paragraph (1), the Federal Trade Commission, if not a party, may intervene as a matter of right.

"(B) The court, in issuing any final order in any action brought pursuant to paragraph (1), may award costs of suit and reasonable fees for attorneys and expert witnesses if the court determines that such an award is appropriate. Any court, in issuing its decision in an action brought to review such an order, may award costs of suit and reasonable fees for attorneys if the court determines that such an award is appropriate.

"(C) Nothing in this section shall restrict any right which any person (or class of persons) may have under any statute or common law to seek enforcement of section 4 or 6 or to seek any other relief.

"(D) When two or more civil actions brought under paragraph (1) involving the same defendant and the same issues or violations are pending in two or more judicial districts, such pending actions, upon application of such defendants to such actions which is made to a court in which any such action is brought may, if such court in its discretion so decides, be consolidated for trial by order (issued after giving all parties reasonable notice and opportunity to be heard) of such court and tried in—

"(i) any district which is selected by such defendant and in which one of such actions is pending,

"(ii) a district which is agreed upon by stipulation between all the parties to such actions and in which one of such actions is pending, or

"(iii) a district which is selected by the court and in which one of such actions is pending.

The court issuing such an order shall give prompt notification of the order to the other courts in which the civil actions consolidated under the order are pending.".

(g) Section 11 of such Act (15 U.S.C. 1340) is repealed and section 12 of such Act is redesignated as section 11.

SEC. 5. The amendments made by section 4 shall take effect upon the expiration of the one-year period beginning on the date of the enactment of this Act. During such one-year period, the Federal Trade Commission shall promulgate such regulations as may be necessary to implement the amendments made by section 4 on their effective date.

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"Comprehensive Smoking Prevention Education Act"
H.R. 4957 - H.R. 5653

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Mr. **Waxman**. I am pleased to introduce our first panel of witnesses. Professionally each has distinguished himself or herself in the field of entertainment. They are also volunteers who have given of their time to work at reducing the deaths and illness associated with cigarette smoking.

John Forsythe has a long list of TV and film credits and currently portrays the character of Blake Carrington in the TV series Dynasty. Amanda Blake charmed many of us in the role of Miss Kitty in Gunsmoke. Robert Keeshan needs no introduction to those who have known and praised his work with children through Captain Kangaroo.

On behalf of the subcommittee, I would like to welcome each of you to our hearing today and ask you to come forward, if you would.

I feel like I should say after many years, good morning, Captain.

Mr. **Keeshan**. An educated Congressman.

Mr. **Waxman**. We are delighted to have each of you with us today to share your views and personal perspectives on this important subject.

Mr. Forsythe, why don't we start with you.

STATEMENTS OF JOHN FORSYTHE, BEVERLY HILLS, CALIF.; AMANDA BLAKE, ON BEHALF OF THE AMERICAN CANCER SOCIETY; AND ROBERT KEESHAN, ON BEHALF OF THE AMERICAN LUNG ASSOCIATION

Mr. **Forsythe**. Mr. Chairman, members of the committee, I want to thank you for inviting me to testify this morning.

Gentlemen, while I am here as a concerned citizen and a father of three children, I also am aware that I am here because I am an actor, and actors have a certain visibility.

This visibility and the affection that audiences may feel for us because of our work we realize can often sway and influence large numbers of people. So, as a group, we actors are not unmindful that this influence can be misused.

Many of us who try to use this influence constructively realize that we bear a very heavy responsibility to do our homework and to be as evenhanded as we can.

I am also aware that I am not a scientist, that my opinions are based on material I have read and largely from the Surgeon General's reports. I am aware, too, of the importance of the tobacco industry to our very shaky economy today. I am also very sympathetic to the plight of the small farmer in these very harsh times.

Having said that, I must tell you that I have very strong feelings about the importance of this bill, H.R. 4957. I was fortunate enough to have stopped smoking some 30 years ago on the advice of a dear friend, who will appear on this panel later, Dr. William Cahan. He is a surgeon specializing in lung cancer, and I will never stop being grateful to him for having advised me to stop.

Two other members of my immediate family were not quite so fortunate. My younger brother and my younger sister, both moderately heavy cigarette smokers, wouldn't or couldn't stop, and they both died of lung cancer within the last 4 years.

To watch a beautiful, vibrant woman in the prime of her life waste away so that she was almost unrecognizable is so devastating that it is very hard for me to talk about. Almost the same situation held true for my brother.

It was not long after those two back-to-back blows that I decided to use whatever clout that I had as a reasonably well-known actor to help. My feeling is that if I can be influential during my lifetime in getting even 50 teenagers not to start cigarette smoking, I would have done much more than having entertained 50 million people through some television series.

So now I talk with some regularity to groups of young people. I try to assist the American Cancer Society and the American Heart Association in any way I can.

To describe my feelings about smoking to you now in specifics I think would be difficult and time consuming. I would prefer, if you will permit me, Mr. Chairman, to read to you a very short editorial, if I may, from the Los Angeles Times. It is dated February 24, 1982. It says:

> In previous reports on smoking and health, the U.S. Surgeon General's office has described cigarette smoking as "associated" with or "related" to bladder, kidney and pancreatic cancers. In his latest report, the Surgeon General goes further. Smoking is now cited as a "contributory factor" in these diseases, as well as the primary cause in 85 percent of the 90,000 deaths that occur annually from lung cancer.
>
> What all this means is that the health risks from smoking have now officially been identified as being more extensive and more demonstrated than in the past. Smokers are more likely to die from stomach cancer or cervical cancer than are nonsmokers. Smokers are more likely to suffer from premature cardiovascular diseases than are nonsmokers.
>
> In all, Surgeon General C. Everett Koop reports smoking is responsible for an estimated 340,000 deaths in the United States each year. Smoking's costs exceed those of any natural catastrophe: $28 billion a year in health care expenses, lost income, lost production.
>
> All use of tobacco is dangerous. Cigars and pipe smoking are linked to some cancers, as are chewing tobacco and snuff. The best and most obvious advice for anyone who uses tobacco is to stop. The best advice in every other case is never to take up tobacco use in the first place.
>
> Here at least there are encouraging signs. Smoking among young people has apparently been declining. In 1977 29 percent of high school seniors said they smoked daily. In 1981 the figure was down to 20 percent. Anti-tobacco education campaigns ought to be intensified. Children should be taught early to avoid tobacco as they would avoid rabid dogs.
>
> The Surgeon General's report again underscores the absurdity of Federal subsidies—$78 million worth this year—to those who grow a crop that is a public health menace. This makes as much moral sense as giving government support to a cannery whose products are regularly contaminated by the botulism bacillus.
>
> What the Surgeon General says about the perils of tobacco ought to be taken seriously by the public, certainly, and for a change by Congress.

They are strong words, but that editorial echoes my sentiments completely.

Mr. **Waxman**. Thank you very much.

Ms. Blake, we would like to hear from you.

STATEMENT OF AMANDA BLAKE

Ms. **Blake**. Mr. Chairman and members of the committee, I am privileged to have this opportunity to represent the American Cancer Society and to voice our support for H.R. 4957, the Comprehensive Smoking Prevention Education Act of 1981.

This task is made especially pleasant in that I am able to testify today with my good friends John Forsythe and Bob Keeshan and that we are here together representing this very exciting new coalition of the American Cancer Society, American Heart Association, American Lung Association and the National Interagency Council.

That these organizations have joined together to fight as a combined force on this issue must surely highlight to us all the overwhelming importance the voluntary health agencies and the medical community place on smoking as a health hazard.

On February 22 of this year, the U.S. Surgeon General, in his report entitled "The Health Consequences of Smoking—Cancer," issued the following warning:

> Cigarette smoking is the major single cause of cancer mortality in the United States. Tobacco's contribution to all cancer deaths is estimated to be 30 percent. This means we can expect that 129,000 Americans will die of cancer this year because of the higher overall cancer death rates that exist among smokers as compared to nonsmokers.
>
> Cigarette smokers have total cancer death rates two times greater than do nonsmokers. Heavy smokers have a 3 to 4 times greater excess risk of cancer mortality.

I was particularly interested in the Surgeon General's statistics on oral cancer and larynx cancer contained in that report. He said that these cancers would strike an estimated 40,000 people and will cause approximately 13,000 deaths this year in our country.

He went on to say that an estimated 50 to 70 percent of oral and laryngeal cancer deaths are associated with smoking. I am a victim of oral cancer, a victim of cigarette smoking. Clearly had I known what it was going to cost me to be a smoker when I lit that first cigarette, I would never have struck the match.

Gentlemen, how do I explain in a way that you can understand the fear of finding out you have cancer. They tell me that cancer is the most feared disease, and I believe it. In our minds, cancer has come to mean death. It has come to mean pain and disfigurement.

When my doctor told me I had cancer of the mouth, I didn't believe it. I had never even heard of cancer of the mouth, yet I had it.

I am an actress, and I found out cancer of the mouth meant I was going to have to have surgery that would affect my face. I would also have to learn to talk again. What worse could you tell an actress? I thought, what if it is in my larynx? What if they have to remove my vocal cords.

When I woke up from the surgery, I remember I made a deliberate effort to moan and I thought thank God, I still have my voice box. The nurse came and asked me if I needed pain medication, and I heard myself say yes. That simple word meant that I could still talk, that I could learn again to practice my profession. I was lucky.

But the emotional pain and the fear were monumental, and the memory of it will be with me for the rest of my life.

After relating my experience to the members of this committee you must surely understand why I am so disheartened to learn that the percentage of smokers among young girls ages 17 and 18 has gone up. I am even more disheartened to learn that lung cancer will outdistance breast cancer as the No. 1 cancer killer of women by as early as next year and that many doctors and medical researchers attribute this to the increase in smoking among women.

We may have come a long way, baby, as the cigarette ads say, but I doubt sincerely that where we women wanted to end up was with higher cancer mortality rates caused by smoking.

Still, we do know that our education efforts have not overall been a failure. According to the American Cancer Society statistics, there are still some 54 million smokers who smoke more than 630 billion cigarettes each year. However, there are also 33.3 million ex-smokers, up from 31.5 million 3 years ago.

Even the level of teenage smoking, which only a few years ago was going up at alarming rates, has started to drop in recent years. Teenage girls who smoke now constitute 13 percent of that population as compared to 15 percent in 1974 and teenage boy smokers are down to 11 percent from 16 percent.

Now, I am not an expert on advertising. I am not a doctor or a research scientist. I am a cancer patient with a particular kind of cancer that is heavily associated by my doctor, by many U.S. Surgeons General and by most of the respected professionals in the country with smoking. I smoked two to three packs of cigarettes a day for about 30 years. That, in my mind, was probably a major contributing factor to my cancer.

I am here because I want to spare as many young Americans as I can the painful and frightening experience that I had. I find it incredible that anyone can sit in this room or in any room and say that since we do not have enough information on the effectiveness of cigarette labeling we shouldn't try a new labeling technique which might increase that number of ex-smokers.

I am sure that we have all seen a report by the FTC that tells us that most people don't really know what could happen to them if they smoke. I surely did not.

If we save just a few thousand people from having to suffer through surgery, radiation therapy, and chemotherapy and from having to face either the prospect or the reality of premature death and of disfigurement by simply changing cigarette labels, no cigarette company is going to be able to convince me that their cost is going to be too great to make it worthwhile. I simply will not accept it.

Last year the tobacco industry made over $6 billion on tobacco products alone—$6 billion on a product whose additives don't have to be listed anywhere, not even with Government researchers; $6 billion on a product that many U.S. Surgeons General say causes cardiovascular disease, lung disease and cancer and other kinds of cancer; $6 billion on a product associated with over 300,000 premature deaths a year and with $25 billion in lost productivity; $6 billion on a product that caused me to go through surgery and extensive rehabilitation treatment.

Since 1974 the Federal Government has spent over $215 million to strengthen that $6 billion a year industry. Every year the Government spends money on tobacco price supports and tobacco research and marketing. That industry can surely afford to spend a little more on its labeling, or even a lot more on its labeling.

Therefore, I, for one, wholeheartedly endorse the legislation offered by the chairman whatever the cigarette industry may claim it is going to cost. I do not believe any cost-benefit analysis of this labeling proposal will prove to be supportive of the tobacco industry's position.

I believe that I would not have smoked had I seen a label on a cigarette package or in a cigarette ad that said, "Warning: Cigarette smoking may cause death from heart disease, cancer, or emphysema." That simple message would have saved me years of grief in dealing with an illness that jeopardized my career and my life.

I urge the members of this committee to overcome whatever political considerations exist with regard to the tobacco industry and to show the courage and public dedication that will be needed to pass this legislation.

I understand how difficult this will be for some of you. I also believe you will have failed in your commitment to your constituents and in your duty as representatives of all the people if you do not, at the very least, give our people an opportunity to make an informed decision about cigarette smoking, an opportunity to know what it is they do to their bodies when they smoke.

I am prepared to assist you, Mr. Chairman, and the other 38 sponsors of this legislation in any way I can to insure passage of H.R. 4957. We must succeed for the sake of the health and safety of our citizens.

Mr. WAXMAN. Thank you very much for your very effective testimony.

Mr. Keeshan.

STATEMENT OF ROBERT KEESHAN

Mr. KEESHAN. Good morning, Mr. Chairman, Congressmen.

I am most happy to be here this morning and representing the American Lung Association. I could just as easily be representing the American Cancer Society or the American Heart Association because I delight in the significance of this coalition, which has come together to more effectively inform America about the dangers inherent in cigarette smoking.

I am grateful for the opportunity that you afford me to appear before this committee to express my views and my concerns about a health hazard which threatens the well-being and eventually the lives of millions of young Americans.

I believe most of you are aware that I have spent the last 35 years on television and radio educating young Americans, helping to develop them intellectually, physically and culturally in order that they may become healthy, well-educated, stable contributors to our society.

The human being begins the learning process at birth. Much learning, especially in the earlier years, is by observation and imitation. For example, we learn language by observation and imitation.

As we grow older, observation and imitation remain a significant part of the learning process and the models of our observation extend beyond the family. By preteen and teen years, many of the most influential models for young people are their peers. It is at this time that that demon, peer pressure, plays a significant role in the development of attitudes, actions and habits.

Peer pressure is probably the most significant influence in causing a young person to light a cigarette for the first time. It is an unnatural habit. Blow some cigarette smoke in the face of your dog or cat one of these days and note the reaction.

We have to overcome this natural antipathy for cigarette smoking, and peer pressure plays a very great role. It has been estimated that over 5,000 children light up for the first time each day. Many of these children are 7 or 8 years of age, part of our hurried generation, anxious to be grown up and, most unfortunately, equating smoking with maturity. Why not? They are modeling the behavior of those they view as sophisticated adults.

Almost 15 percent of teenage girls smoke cigarettes, slightly more than teenage boys. The increase in cigarette smoking by teenage girls in the last decade is alarming. There has been much speculation as to the reasons for this increase.

Perhaps smoking by young women is no longer frowned upon. Teenage girls have, indeed, been liberated from social taboos. They are now as free as any other group to endanger their health and to shorten their lifespan.

We all know the pains suffered by the long-time adult smoker who decided to quit the habit, and we are most sympathetic, but would it not be a better idea to apply an ounce of prevention to the young American, to arrest the development of America's most preventable cause of death?

This bill of yours, Mr. Waxman, which is the subject of these hearings, is particularly attractive to me because it calls for the organizations, the marshaling of forces to educate all Americans as to the dangers inherent in cigarette smoking in a much more effective manner than we had done so in the past.

Educating young Americans, telling them the facts, disabusing them of the notion that cigarette smoking is a sign of maturity, helping them to resist peer pressure by developing proper attitudes at an early stage in life, are all programs that can creatively and effectively reach young Americans with the message cigarette smoking, feeling good and living long do not go together.

I have become convinced that on our program Captain Kangaroo, which is produced for preschool and early school age children, it is now time for us to develop programs that will help young people develop attitudes toward smoking, that will help them in a few years, later in their life, to resist peer pressure that is such a significant cause of their lighting up for the first time.

Our programs in this regard will begin in the fall of this year. As a direct result of this coalition which comes before you today, we must reach preteens and teens with the life-saving message, smoking can kill you.

Let's help those older Americans who are victims of the habit to give it up, but let us turn our great efforts to our children, who have the most to gain and the longest to live. If we can effectively reach young men and women and prevent them from beginning to smoke, if we can reach them successfully, then we may all say with conviction, you have come a long way, baby.

Thank you, sir.

Mr. **Waxman**. Thank you.

Let me say to the three of you, you have been absolutely fantastic to come here. I think your testimony is as effective as any I have ever heard as a Member of Congress. I think you have explained to us and brought a visibility to this issue that I think will have an effect beyond this room. I think it will make it far, far easier for us to pass this legislation.

Each of you has been working as a volunteer, talking to young people, talking to organizations about the dangers of smoking.

Mr. Forsythe, why don't I direct this to you. What reaction do you get when you talk to children, young people and teenagers about smoking?

Mr. **Forsythe**. I agree most wholeheartedly with Bob that that should be our thrust because as cruel as it may seem, we can try to help the older people. The young people is where everything is at.

It is quite remarkable the kind of pressure that intensified educational campaigns have brought about in schools, the way apparently the strongest point in the antismoking campaign has been children coming home, telling their parents, "please stop smoking, Daddy, please stop smoking, Mother."

I would think that our efforts and our moneys could best be spent largely in that area.

Mr. **Waxman**. When we discouarge them from taking up a bad habit, it has an additional impact?

Mr. **Forsythe**. A double-ended thing, yes. Some people may complain about frightened children, but I think it is a more realistic approach to life, even though they may be slightly frightened.

Mr. **Waxman**. The three of you are involved in the media. You know what is effective in communicating to people, you know what is effective in reaching them.

How do you see the role of the media in cigarette advertising and in the subtle ways that role models are established in programing, to influence people to take up this habit? Do any of you want to comment on it?

Mr. **Keeshan**. I think there is no question that role modeling is very persuasive with young people. When a character who is obviously sophisticated, glib, well spoken, admired, in a dramatic context, let us say, is a cigarette smoker, the two become confused.

There is no question that a 7- or 8-year-old will associate that one attribute of the character, the use of cigarettes, with the other attributes of that character—the glibness, maturity, admiration which he earns.

I think it is incumbent upon us—I would never tell a producer under no circumstances should a character smoke a cigarette because there are times when for dramatic purposes it is necessary, as there are times when for dramatic purposes it is necessary to portray villians.

But if it is gratuitous, if it is merely a gratuitous action on the part of the character, I think there is absolutely no excuse for it.

Mr. **Waxman**. Do you know whether producers of programs or films either in television or motion pictures will purposely put in a plug for cigarettes or a brand of cigarettes by using it as part of the scenario or part of the performance?

Ms. **BLAKE**. I have never encountered that. I think inserting of smoking of cigarettes to make a store point or portray a dramatic moment, I think that has been decreasing, very much so, in the last years.

They are using other methods of showing or pumping up a dramatic moment rather than lighting up a cigarette. I have found a decrease in it.

Mr. **FORSYTHE**. I have not come across it, either. As a matter of fact, I have something good to say about the tobacco industry in one sense.

For 5 years I had a television series called Bachelor Father, and our sponsors were tobacco people. I indicated to them that I never wanted to make a commercial, I never wanted to appear in any commercials. They were kind enough never to force me to appear.

So on that level, I think they have been good. On some other levels I could question that.

Mr. **KEESHAN**. I have to add to those kind comments. I must say, Mr. Chairman, that no cigarette company has ever asked Captain Kangaroo to smoke.

Mr. **WAXMAN**. Well, I want to thank you again. I want to recognize my colleagues to ask questions. I want you to know how much I appreciate your testimony.

Mr. Bliley

Mr. **BLILEY**. Thank you, Mr. Chairman.

Mr. Keeshan, would you say from your experience, children begin smoking because of observing it in someone else, their parents, their peers, or do you think they do it because of advertising? What do you think is the primary purpose?

Mr. **KEESHAN**. A decade ago or more, Mr. Bliley, I might have been able to say to you that I think advertising influenced them because I think the medium that advertises or affects children—and by children I mean preteens and younger—would be the television media. It has been a generation since we have had such advertising in television.

It can be influential in magazine advertising, but I do think the greatest pressure on young children 8 and 9 and 10 and 11 years of age to smoke comes from peer pressure.

That is why I think educational programs with the young, that will develop attitudes toward smoking, make them aware and informed as to the dangers of smoking, are very important in order that they may be able to resist peer pressure.

It is not the only action that peer pressure causes them to engage in, but peer pressure is very significant with young people.

Mr. **BLILEY**. From your testimony I gathered that all three of you have smoked at one time or another, some perhaps longer than others. I know Mr. Forsythe testified that he gave it up. I assume the others have, too. He indicated, I believe, that it was consultation with his physician that caused him to give it up.

How about yourself? Was it the warnings on the label, for example, what we are considering here, or was it consultation with your physician?

Mr. **KEESHAN**. It was consultation with my physician. He made it very clear to me that I was risking my health in continuing smoking. I must say that as important as the reason for giving it up was the reason I took it up in the first place. I think it was more than anything else an affectation.

I remember very, very clearly doing it because every other teenage kid that I associated with did it, and if you didn't do it you were a sissy. It was just peer pressure that caused me to take it up.

I remember that as a teenage experience very plainly. If I had been the beneficiary of an education program, as our young people can be today, I don't think I would have taken up cigarette smoking in the first place. I would have resisted that peer pressure.

Mr. **Bliley**. Thank you.

Do you have a comment, Ms. Blake?

Ms. **Blake**. Yes. I took up smoking because I thought it was glamorous.

Mr. **Bliley**. My question was, what caused you to stop?

Ms. **Blake**. It was because I had a sore in my mouth and when I went to the doctor he said, you are going to quit smoking, aren't you? I said, well, the horse has already escaped from the barn, but I am quitting smoking. If you can save my life, I promise you I will never smoke again.

Mr. **Bliley**. Thank you very much.

Mr. **Waxman**. Mr. Rogers.

Mr. **Rogers**. Thank you, Mr. Chairman. I appreciate the chairman's kind courtesy in allowing me to sit on this panel today and participate in the proceedings.

I would like, Mr. Chairman to say thank you to these three people in the public eye for joining us here today on this very important cause. There are some of us who, although aware of the possible dangers of smoking, are also somewhat concerned about the fact that this legislation may be overreaching in some of the constitutional aspects and philosophical aspects of what Government should and should not do.

There are some of us who have a little concern about the central Government setting up, in effect, a brainwashing organization to sway people, free people, on what they should do or not do.

Some of the aspects of this bill bring to mind possible fears of whether or not the Central Government should be involved in swaying public attitudes for or against a matter that is essentially a private choice and the dangers that that might bring to the fact that the Government possibly could enter other areas of public persuasion on matters that are, in a democracy, matters of private choice.

This bill, in fact, would create a very large bureaucracy in the Government with unspecified, open-ended funding. It would substantially place a very large load on the Federal court system, which already is almost swamped in litigation, by permitting any person to bring a civil suit with penalities of $100,000 for alleged violations of the regulations with even one pack of cigarettes. The United States District Court amount for bringing suit would be waived under these proceedings.

Two, I think this bill would divert attention from all other environmental and occupational factors which may have human health side effects by focusing exclusively on smoking.

The chairman's proposal is really premised on an FTC study that claims that Americans are not aware of the health warning on cigarette packages and in advertising. The 6-month comment period for that staff study has not yet expired. Yet, we are being asked to take action before the facts are in from that staff report by the Federal Trade Commission.

This change flies in the face of a November 20 statement of last year by the Health Secretary, Mr. Schweiker, who said, and I quote, "A Gallup Poll this year found that the percentage of smokers in the United States is now the lowest in the 37 years of the Gallup Polls. 90 percent, 9 of 10 people, agree that cigarette smoking is harmful."

The present system I think of providing health information to permit people to make their own decision, to make a free choice on whether or not to smoke apparently is working because 90 percent of the people understand and agree that cigarette smoking is harmful.

Would we, in this bill, be providing a lot of possible danger to our democratic system, in addition to the funding costs, in addition to the huge bureaucray involved, in addition to the economic costs involved, and would we be perhaps loading up on the Government's so-called responsibility in this area at great cost?

I wonder what your thoughts might be, any of you who would care to comment on that line.

Mr. **Keeshan**. Mr. Rogers, I agree that we should be concerned and that we should permit every American to make a free choice, to make a decision as to whether to smoke cigarettes or not to.

We are not talking about banning the sale of cigarettes, but I think that we also must be certain that every American is able to make an informed decision.

For that segment of the population in which I am particularly interested, and my friend Mr. Rogers is particularly interested—the other Mr. Rogers, Mr. Rogers—we are concerned that our young Americans are not able at this point with the information they have to make a free choice when they are subjected to peer pressure and modeling at a later age of 9 and 10 and 12.

The American Lung Association, for example, has a marvelous program which is called—it is in an experimental stage at the moment—well, the Seattle program in the Seattle area in which they do emphasize many health hazards, cigarette smoking only one of them.

Other concerns that you expressed this morning, other environmental concerns are also emphasized in this program. The program is designed for kindergarteners, first and second graders. These young people will be informed. So, they will be making an informed judgment.

I think that is what we should be concerned about, that when that free judgment is exercised by all Americans, as we like so proudly to point to our ability to make free choices, that that free choice will be intelligently made, just as we try to inform them every 2 years when we run for Congress so that they can make an intelligent and informed choice among candidates.

We want them to make an informed choice as to whether they should smoke or not smoke. I want my young people to be informed. I think this bill will go a long way to help to inform those young people.

Mr. **Forsythe**. Mr. Rogers, in spite of the New Federalism I am old-fashioned enough to believe that the Government has a very, very strong responsibility when a public menace is as evident as the Surgeon General makes this appear.

When you have this kind of incontrovertible proof that it is not allied or related to, but contributory, then surely Members of Congress have a very heavy responsibility in this matter. I am not quite as worried about the bureaucratic results as you are.

Ms. **Blake**. I don't think I can top that. I think you have said it all, John.

Mr. **Rogers**. I am wondering, since you apparently believe, all of you, that the United States Government, the Central Government, should have a heavy responsibility in convincing our citizens of our country not to smoke, would it be also equally as much of an obligation of our Government in your view that perhaps we should require advertisements for power lawnmowers to disclose that push lawnmowers are relatively safer?

Should Volkswagen be required to put in their advertisements that Volkswagen passengers are more likely to be injured in the event of an accident than passengers in other kinds of cars? How far should we go with this new ground that we are breaking with this bill?

Mr. **Waxman**. Will my colleague yield to me for a second?

I want to address the question as the author of the bill. It is an interesting point you are raising about the obligation of the Government in this regard.

The Constitution provides that the public health and safety is a responsibility for the Government of the United States. We are now paying billions of dollars for the health care costs of people who have been affected by cigarette smoking.

The Government is already spending millions of dollars in tobacco subsidies. We are already involved. Since we are paying all of these costs, particularly the billions of dollars in costs that take care of people's health, it seems to me the Government has to figure out what to do.

In protecting the public health, we can ban cigarettes, as we can ban any other item that is clearly so dangerous. As a policy that wouldn't work. We found that out when we tried to have a prohibition against alcoholic beverages.

We want to assure people's right to make decisions for themselves, but when we have advertisements that are paid by people who stand to profit, that try to make cigarette smoking attractive—I hold up this advertisement as one of many examples—it seems to me that someone has to counter the heavy propagandizing, brainwashing, that is going on paid for by the industry. Industry stands to make billions of dollars from their investments in promotional advertising to try to persuade people to take up a habit that will do a tremendous amount of harm to their health. At a minimum I think the government ought to be trying to make people aware of smoking's health risks so that they can make a free and informed choice.

I even think we ought to go far beyond just asking the industry to change their labels. I would like to see us pay for advertising on television to counter the years of advertising that have built up over time to convince people that smoking is glamorous.

We are not going that far. We are suggesting that the Government ought to let people know what is at risk for them.

Now, I find it a peculiar argument to say on the one hand Government should not be involved in telling people one thing and on the other hand suggest that 9 out of 10 people already know it. I want to be sure that everyone knows that when they pick up a cigarette, when they decide for themselves to smoke, that they are endangering their health. Furthermore they are endangering not just themselves, but they present a risk to their family due to their illness and possible death, they cost the taxpayer who pays for their treatment and they cost society in the loss of productivity.

Mr. ROGERS. Reclaiming whatever time I may have remaining, I think the American Lung Association and the American Heart Association and other privately funded organizations are doing an excellent job of educating and warning.

I think that these privately funded organizations are the proper groups to fund these efforts because they do not get into the constitutional and philosophical questions of a Central Government brainwashing its citizens.

Mr. BLILEY. Since this is a bill, Mr. Chairman, I wonder if I might ask you a question.

Since 9 out of 10 people—more than 9 out of 10 people, according to the Gallup Poll—already realize that smoking may be harmful to their health, what increased percentage do you think this bill, should it become law, will add to that?

Mr. WAXMAN. Any increase in public knowledge is worth the price of having stronger labels. Saying to someone they may die from heart disease, lung disease or cancer raises in their minds what kinds of risks they are taking when they smoke.

It is well worth requiring the industry that is earning billions of dollars from selling this product to at least take on that obligation of informing the public as to the risks inherent in this product.

Mr. BLILEY. Not to prolong this, Mr. Chairman, but I know the penalties have been increased 10 times in this bill, from $10,000 to $100,000. It is my understanding that since labeling was required on cigarettes there has never been a case brought of a violation.

I was wondering if you might educate me as to why the increase, if we have never had a violation before. Why increase it?

Mr. WAXMAN. Let's get into that down the road as we look into the sections of the bill. I think we ought to have effective sanctions to assure compliance with the law.

Let's hear from our witnesses and go into the questions of why the legislation is needed or not needed.

Mr. BLILEY. Thank you, Mr. Chairman, but I thought we were already doing that.

Mr. ROGERS. I yield back.

Mr. WAXMAN. Let me again extend my appreciation to you. It's been very helpful to have you here, and I think the fact that you are here is a demonstration to us not just of your strong feelings and sincerity, but the importance of this matter. Thank you.

Our next panel represents a broad spectrum of voluntary public health groups, including the American Heart Association, the

American Cancer Society, the American Lung Association and the National Interagency Council on Smoking and Health.

I am particularly pleased these gentlemen could be here with us this morning to share their special medical and scientific expertise on this important subject.

Steven Ayres is the chairman of the Department of Medicine at St. Louis University School of Medicine. Dr. John Oates is professor of medicine, Department of Medicine and Pharmacology, School of Medicine, Vanderbilt University. Dr. Robert Daugherty is the dean of the School of Medicine, University of Nevada. Dr. William Cahan is attending surgeon at the Memorial Sloan-Kettering Cancer Center.

We will make your statements a part of the record. You may proceed as you see fit.

STATEMENTS OF STEPHEN M. AYRES, M.D., CHAIRMAN, SMOKING ON HEALTH COMMITTEE, AMERICAN LUNG ASSOCIATION; JOHN A. OATES, M.D., CHAIRMAN, SUBCOMMITTEE ON SMOKING, AMERICAN HEART ASSOCIATION; WILLIAM G. CAHAN, M.D. ON BEHALF OF AMERICAN CANCER SOCIETY, INC.; AND ROBERT M. DAUGHERTY, JR., M.D., PH. D., CHAIRMAN, NATIONAL INTERAGENCY COUNCIL ON SMOKING AND HEALTH

Dr. AYRES. Mr. Chairman, members of the committee, I thank you for the opportunity of presenting the views of the American Lung Association and chest physicians throughout the United States on the issues of cigarette smoking. It is important to recognize that the physicians here represent a broad fabric of American medicine, physicians specializing in heart disease, cancer, and lung disease.

I would like to emphasize that the modern physician would prefer to prevent disease rather than to treat it. It's very clear that a large percentage of the almost 2 million deaths each year are related to problems that are potentially preventable, related to various habit forming, unhealthy human behaviors. Cigarette smoking clearly causes lung disease, heart disease, and cancer.

If people did not smoke, many people who die of those diseases would not die of those diseases. Chronic respiratory disease is a condition that leads individuals to become progressively short of breath. You might visualize it as breathing through a narrow straw for many years of life, unable to receive life-giving air.

There are about 47 million people in the United States who have chronic respiratory disease and the cost of care for these people is approximately $45 billion. Cigarette smoking is a major cause of this problem. During this past year, 60,000 people died. There is no real controversy regarding the relationship between smoking and disease. Over 30,000 studies have been published, and almost all of them have demonstrated some aspect of this positive relationship.

There have been over 14 reports provided by the Surgeon General representing the Federal Government. The National Heart, Blood, and Lung Institute in 1978 published a document in which they concluded that cigarette smoking is the single most important risk factor for disease of the lung. Reduction or ideally, elimination of cigarette smoking would have a major impact on national health and on the social and economic costs that are a consequence of smoking related diseases.

Now this is the National Institutes of Health speaking, the most prestigious research organization in the entire world. Part of this legislation is designed to coordinate the findings and activities of the National Institute of Health with physicians and health educators throughout the United States.

The only way to modify unhealthy behavior is through education. There has been considerable speculation about the impact of the label and other activities on those people who say they know about the health effects of cigarette smoking. Knowledge and belief are two different sides.

We feel that knowledge can only be converted into belief by constant reminders, by constant health education by what some would call brainwashing. Each year, there are many new studies which confirm these relationships. I have presented some of these to the committee in the formal report. Very few studies ever surface that doubt this relationship. We are concerned about the imbalance that exists between those forces designed to get people started smoking, and those meager forces of we physicians, health educators, and others who try to modify and prevent smoking.

Let me just give you one example taken from a report written by the Ted Bates Advertising Co. in a chapter which they wrote, they said, and the title of the chapter was "How to Reduce Objections to the Cigarette."

They pointed out that since cigarettes do not have any real, absolute positive qualities, that it's very important that effective advertising reduce objections. Then further in their report they pointed out what I believe to be the real heart of the issue in terms of the overall approach to young people. They point out, this is the Ted Bates Organization speaking; for the young smoker the cigarette is not yet an integral part of life, of day-to-day life; in spite of the fact that they try to project the image of a regular, run-of-the-mill smoker. For them a cigarette and the whole smoking process is part of the illicit pleasure category. In a young smoker's mind a cigarette falls into the same category of drinking wine, beer, shaving, wearing a bra or purposely not wearing one. Demonstration of independence. For a young starter, a cigarette is an introduction to sex life, courtship, smoking pot, and keeping late hours.

It then recommends a strategy for attracting young people to start smoking. We feel labeling is only a beginning. Clearly, labeling by itself will only continue the process of attempting to inform young people and older people concerning the hazards of cigarette smoking. We aim to have a social milieu, a fabric in which unhealthful behavior becomes socially acceptable.

Consider, if you will, that this legislation really represents the role of the foot soldier in an entire armentarian. It is the beginning, not the end. I would point out, gentlemen, that these are difficult economic times. The Federal portion of the over $200 million in health costs are rising. Medicare health costs are rising. If Americans were to stop smoking tomorrow, it is very likely that the budget could be balanced considerably earlier than is presently projected.

Thank you for the opportunity.

[Dr. Ayre's prepared statement and illustrations follow:]

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THE IMPORTANCE OF THE FEDERAL GOVERNMENT IN THE PREVENTION OF SMOKING-RELATED DISEASES

Testimony in Support of H.R. 5653,
a revised version of H.R. 4957
the Comprehensive Smoking Prevention Education Act by
The American Lung Association

Prepared by Stephen M. Ayres, M.D.
Chairman, Smoking or Health Committee

February 1982

The environmental sanitation movement of the early Twentieth Century with an emphasis on pure drinking water and sanitary waste disposal provided clear evidence that maintenance of the public health was a major responsibility of government. More recently, the widespread adoption of cigarette smoking has led to a new epidemic of preventable deaths that can only be eliminated by direct action of public health authorities. Like the Black Death or Plague of 1348-1350 which killed one third of the population, cigarette smoking leads to the premature deaths of large numbers of a nation's population. Adoption of H.R. 5653, the "Comprehensive Smoking Prevention Act" would place the United States government squarely in the role of defender of the public health.

The Federal Government must attempt to eliminate as many of the hundreds of thousands of deaths due to cigarette smoking as possible and to reduce the billions of dollars spent for the care of people with tobacco-related diseases. Every effort must be made to discourage young people from starting smoking and to help confirmed smokers stop smoking. The increase in cigarette smoking among adolescent girls has been particularly alarming and there is reason to believe that a group of societal pressures are responsible for this situation. Lung cancer was at one time extremely rare in women; its dramatic increase in the past decade is a stark reminder of the risks of adolescent cigarette smoking.

KNOWLEDGE AND BELIEF

Why do people smoke? The Roper Report commissioned by the tobacco industry warned that most people knew that cigarette smoking was harmful and that many smokers desired to stop. This public opinion organization detailed a series of problems that threatened the continued viability of the tobacco industry and emphasized particularly the spread of health knowledge among the public and the growing activism of non-smokers.

Unfortunately, the knowledge that cigarette smoking is dangerous is not necessarily translated into abstinence. Behavioral scientists have developed the "health belief" model to explain why individuals may "know" that a particular behavior is harmful even though they do not translate this knowledge into appropriate action. They know but they do not believe. Health education is pitifully primitive in the United States, health educational spots have markedly declined from television programming, and the miniature "warning" on cigarettes and cigarette advertising is ineffective. At one time, when a surgeon general had not been appointed to office, the tobacco industry ridiculed the printed warning by pointing to the non-existence of the individual whose name appeared on the cigarette package.

Rotation of warning labels that would constantly remind potential smokers of specific diseases produced by cigarette smoking each time they reached for a smoke and would have an important effect on converting fact into belief. While clearly less effective than the billion dollar advertising blitz launched annually by the tobacco industry, such rotating labels would be an important first step. A casual inspection of advertising material convinces most observers that its mission is to encourage non-smokers to smoke and to keep smokers smoking. Rotation of labels should be followed by other health educational techniques such as the publication of an anti-smoking message of identical size next to each smoking advertisement. Free choice in a free society is only possible when each individual is informed. Crying "fire" in a crowded theatre is not dissimilar to encouraging one's neighbor to regularly inhale smoke!

SMOKING DOES CAUSE HUMAN DISEASE

Although the tobacco industry characterizes the linkage of cigarette smoking and human illness as the "Smoking and Health Controversy," the only controversy is the unwillingness of that industry to voluntarily phase out cigarette production and to encourage individuals to stop smoking. The evidence establishing the toxic nature of cigarette smoke has been accumulating since the publication of the first report of the Surgeon General in 1964. Since then, thousands of articles documenting the harmful effects of cigarette smoking have been published and the United States Public Health Service table below shows death rates for two hypothetical population samples; a group of 100,000 smokers and another group of 100,000 non-smokers. The number of deaths expected in the subsequent ten years for the two groups of men between the ages of 55 and 59 are shown. Only the four most common causes of death associated with smoking are shown in this calculation.

	Non-Smokers	Smokers
Coronary Artery Disease	6,168	11,454
Lung Cancer	257	3,223
Stroke	1,066	1,600
Emphysema	69	860
Total Deaths Expected	7,560	17,137

This analysis shows that for each 100,000 population sample in the age group 55-59 years, the smoking population will have 9,577 more deaths than the non-smoking population. If one assumes that the total hospital and professional cost of each individual prior to death averaged $10,000, the total excess health cost of the smoking group is close to 100 million dollars. Since there are about five million men in the United States between the ages of 55 and 59, the total excess health cost in that age bracket is five billion dollars.

NEW AND CONFIRMING EVIDENCE IS CONTINUALLY PUBLISHED

Each year a large number of publications from laboratories around the world confirm the relationship between cigarette smoking and human disease. Many different types of studies have been performed--epidemiologic study of death rates, results of stopping smoking, studies of lung function, and examination of tissues at autopsy in smokers and non-smokers. A brief selection of several recent papers follows. Each of these has been published in a highly respected, peer-reviewed medical journal.

Two recent studies have shown increased life expectancy in individuals who discontinued smoking compared to those who continued has issued 13 subsequent reports on smoking and health. In 1976, the National Heart, Lung and Blood Institute, a component of the prestigious National Institutes of Health, concluded its Task Force Report on Prevention, Control and Education in Respiratory Diseases with the following recommendation:

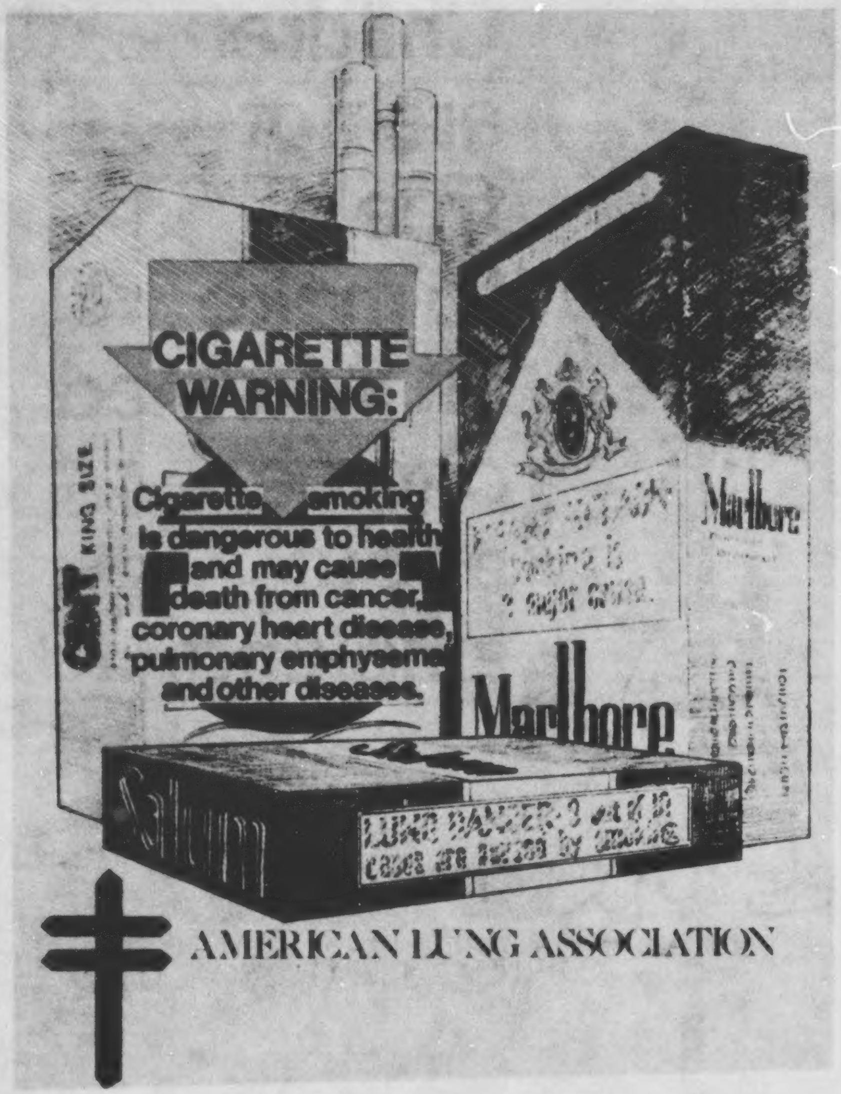
> "Cigarette smoking is the single most important risk factor for diseases of the lung. It is known to cause or exacerbate not only the respiratory diseases discussed in this report, but lung cancer, cardiovascular disease and stroke, as well. Reduction, or ideally, elimination of cigarette smoking would have a major impact on national health and on the social and economic costs that are a consequence of smoking-related diseases. The problem of smoking warrants the highest priority in all programs concerned with diseases of the lung. The most important target groups for antismoking programs are preadolescents and adolescents who have not yet started to smoke or in whom the smoking habit is not entrenched."

In a free society, government cannot directly order abolition of destructive behavior but must constantly warn of the consequences of such behavior so that individual citizens can make informed choices. Such destructive behavior accounts for a large component of the annual mortality experience. In 1980, for example, approximately 700,000 died from coronary artery disease, 180,000 from stroke, 105,000 from lung cancer, 30,000 from bladder cancer, 7,500 from esophageal cancer and 60,000 from emphysema and other chronic obstructive pulmonary diseases. The common factor linking these one million deaths, more than half of the total deaths each year, is a demonstrated relationship to cigarette smoking.

Many of these deaths are related to multiple factors including heredity, exposure to environmental agents and excessive dietary cholesterol as well as to cigarette smoking. Cigarette smoking, however, is the single most important factor--many times more important than any other risk factor. Detailed epidemiologic data allow separation of the mortality directly related to smoking.

The Geller-Gesner Tables, published by Robbins and Hall in 1970, have been used by many physicians who practice "prospective medicine" to analyze the life expectancy of individual patients. The smokers had significantly more evidence of inflammation in the smallest areas of the airways and that this inflammation was probably reversible when smoking was discontinued. Hale et al in an article published in the same journal demonstrated for the first time that smokers dying without obvious heart disease had thickening of the pulmonary blood vessels. These data suggest a response to reduced oxygen concentrations in the smaller airways related to cigarette smoking.

The toxicity of cigarette smoke to innocent bystanders as well as to smokers was shown by a recent study of Dahms et al. (Chest 80 530-534, 1981). Ten patients with bronchial asthma and ten normal individuals were exposed to cigarette smoke in an environmental chamber. Pulmonary function tests (the $FEV_{1.0}$) decreased 21% in the asthmatics but not in the normals. The asthmatic patients were not particularly sick and were ambulatory. A substantial percentage of the general population has the sort of reactive airways demonstrated by the asthmatic so that the study emphasizes a major public health concern.


CIGARETTE WARNING:
Cigarette smoking is dangerous to health and may cause death from cancer, coronary heart disease, pulmonary emphysema and other diseases.
KING SIZE
Marlboro
Marlboro
Salem
LUNG DANGER: 9 out of 10 cases are caused by smoking
AMERICAN LUNG ASSOCIATION

Children are not free to make an informed choice about smoking.

AMERICAN LUNG ASSOCIATION

In this country 340,000 people die prematurely every year from the effects of cigarette smoking.

AMERICAN LUNG ASSOCIATION

POLLED AMERICANS UNAWARE

Smoking causes most cases of bronchitis and emphysema	60% did not know
Smoking causes lung cancer	20% did not know
Smoking causes many heart attacks	50% did not know

AMERICAN LUNG ASSOCIATION

Mr. **Waxman**. Thank you very much.
Dr. Oates.

STATEMENT OF JOHN A. OATES, M.D.

Dr. **Oates**. Mr. Chairman, members of the committee, I am Dr. John Oates, professor of medicine and pharmacology at Vanderbilt University, and chairman of the subcommittee on smoking of the American Heart Association. I appreciate the opportunity to testify on behalf of the Heart Association which is a nonprofit, voluntary health organization with 119,000 members and almost 2 million other volunteers who are dedicated to the reduction of premature death and disability from cardiovascular disease.

Cardiovascular diseases kill nearly 1 million Americans each year. This year, some 1½ million Americans will have a heart attack and about 550,000 of them will die from this cause. Another 174,000 people will develop peripheral vascular disease, a major disability. These figures have special significance because cigarette smoking has been firmly established as a major contributor to the occurrence of heart attacks, sudden death, and peripheral vascular disease.

Cigarette smoking is the most preventable cause of death and disability from these cardiovascular diseases. Compared to the nonsmokers, cigarette smokers are more likely to suffer heart attacks, to die from heart attacks and to die suddenly from coronary artery disease. Fortunatley, quitting smoking reduces the risk toward that of the nonsmokers.

Cigarette smoking particularly increases heart attacks and sudden death among younger men and women. The American Heart Association and the Coalition on Smoking on Health are committed to helping smokers who want to quit and preventing children from starting to smoke. Accordingly, we wholeheartedly support the passage of H.R. 5653.

The provision of statutory standing of the Office of Smoking and Health is very important. The proposed role of the Office of Smoking and Health will be instrumental in combining and coordinating the efforts of the public and private sectors to address the problem of cigarette smoking. Thus, a relatively small Federal effort can be used to mobilize enormous private sector resources to address a major health problem. Requiring the rotation of new warning statements on cigarette packages and advertisements is needed to better inform the public since the current warning statement is overexposed and worn out.

This should come as no surprise since any message presented in exactly the same way will soon become so familiar that it will lose its effectiveness. Moreover, two optometrists in a study of cigarette billboards found that while the brand name was highly visible, the warning could not be read.

Clearly there is a need for varied warning statements and a format that is visible. Yet the tobacco industry argues that the warning labels should remain the same in every ad. This is contradicted by the practices of the industry itself which changes advertising copy frequently to sell cigarettes.

For example, here are copies of a very successful advertising campaign which made numerous changes during the course of a single year. It's obvious that the message must be changed to attract attention. Cigarette advertising uses a multitude of different images, to appeal to different markets. The logical extension is that the warning must also be tailored to appeal to differing consumers.

For example, smokers with a history of heart disease in their families may find a warning on smoking and heart attack a much more personally relevant matter than a general, vague message.

The American Heart Association has insufficient access to the media to inform the public adequately on the hazards of smoking. The number of antismoking public service announcements on television since the ban on cigarette commercials has been drastically reduced with hardly any being shown during prime time. Information in the print media has been equally scarce. It has been suggested by some that heavy advertising by the tobacco industry serves to discourage coverage of the hazards of smoking in the print media.

This potential for intimidation was reinforced when a cigarette advertising account for a half million pound sterling was abruptly withdrawn from the Sunday Times of London after a report on heart transplants which named the brands of cigarettes smoked by patients. For whatever reason, the broadcast and print media do not provide the public with full information on the dangers of smoking.

Accordingly, the warning labels would provide an assurance that all citizens have access to at least a minimal level of information. It would provide an important means by which the Federal Government at no cost can effectively assist the private sector in educating the public about the hazards of smoking. The decision to smoke is frequently made before the age of 21, usually without full awareness of the odds against escape from the smoking habit. This legislation would be an important step toward assuring that this is an informed decision.

Mr. **Waxman**. Thank you very much.

[Dr. Oates' prepared statement follows:]

TESTIMONY
OF
JOHN A. OATES, M.D.

CHAIRMAN
SUBCOMMITTEE ON SMOKING
AMERICAN HEART ASSOCIATION

Mr. Chairman and members of the Subcommittee on Health and Environment, my name is John A. Oates, M.D. I am Professor of Medicine and Pharmacology at Vanderbilt University and Chairman of the Subcommittee on Smoking of the American Heart Association.

I appreciate the opportunity to appear before this Subcommittee on behalf of the American Heart Association to testify in support of the "Comprehensive Smoking Act of 1981." As you may know, the American Heart Association is a nonprofit voluntary health organization with over 119,000 members and almost 2 million other volunteers who are dedicated to the reduction of premature death and disability from cardiovascular diseases.[1]

Cardiovascular diseases kill nearly one million Americans each year. This is more than all other causes combined. Heart attacks, the nation's number one killer, claims most of these lives. This year, as many as 1.5 million Americans can be expected to have a heart attack and about 550,000 of them will die. The survivors will join over 4 million Americans who have a history of coronary disease.[2]

These figures have special significance because cigarette smoking has been firmly implicated as a major contributor to the occurrence of heart attacks, sudden death, peripheral vascular disease and it greatly aggravates other forms of cardiovascular diseases. Cigarette smokers are more likely, than non-smokers, to suffer a heart attack, more likely to die from these attacks and more likely to die suddenly. This effect is directly related to the amount smoked with heavy smokers being at three times the risk of non-smokers. Fortunately, ceasing to smoke reduces the risk toward that of nonsmokers.[3]

Based on data from the Framingham Heart Study[4], we estimate that over 174,000 Americans will develop peripheral vascular disease this year. While, twenty percent of these people will be diabetics, 70% of the remainder will be cigarette smokers.[5] Moreover, diabetics who also smoke are at even greater risk.[6] The link of cigarette smoking to peripheral vascular disease is consistent and independent of diabetes and other risk factors and related directly to the number of cigarettes smoked.[7]

Perhaps most significant is the fact that when people stop smoking, their risk of these cardiovascular diseases gradually returns to normal. The risk of fatal and non fatal heart attacks among ex-smokers is similar to non-smokers in about 10 years.[8-9] The risk of peripheral vascular disease is similarly reduced to that of a non-smoker in about 5 years.[10]

The evidence incriminating cigarette smoking as a major risk factor for heart attack and peripheral vascular disease was judged by an expert panel of the American Heart Association to be conclusive.[11] They further concluded that "Theoretically, cigarette smoking is the most preventable cause of these cardiovascular diseases and mortality therefrom".[3]

In spite of the overwhelming evidence linking cigarette smoking to cardiovascular and other diseases, over 52 million Americans are still smoking.[12] However, two thirds of these smokers would like to quit and most have tried to do so.[12] Following an unsuccessful attempt to quit, many of these smokers tend to switch to low tar and nicotine cigarettes.[13-14] This is evidenced by the continuing rise in the market share of these cigarettes to 60.9% of all sales in 1981.[15]

This development is alarming because the evidence[13] suggests that many people switch to low tar and nicotine in an effort to lower their risk of adverse health effect. While switching to these cigarettes may lower the risk for some diseases, there is no evidence of a reduction in risk for cardiovascular diseases.[14] In fact, recent evidence from the Framingham Heart Study[16], suggests that low tar and nicotine cigarettes may even increase the risk of cardiovascular disease. This could be a very dangerous development since most cigarette-related deaths are from heart attacks.[3]

The American Heart Association is committed to helping smokers who want to quit and preventing children from starting to smoke. Accordingly, we wholeheartedly support the passage of H.R. 4957, the "Comprehensive Smoking Prevention Education Act of 1981". The provision of statutory standing to the Office on Smoking and Health is very important. The proposed role of the Office on Smoking and Health will be instrumental in combining and coordinating the efforts of the public and private sectors to address the problem of cigarette smoking. This is a clear case where a relatively small federal effort can be used to mobilize enormous private sector resources to address a major health problem.

The provision requiring the rotation of six new warning statements on cigarette packages and advertisements is needed to better inform the public of the specific dangers of cigarette smoking. The rationale for the requirement of a warning statement in the first place, was to inform consumers of the health hazard. However, the FTC[17] has recently concluded that the current warning statement, which has been used on packages and advertisement since 1972, is overexposed and worn out. This conclusion was supported in part by a study by Starch Message Report Service which found that only 2.4% of adults exposed to cigarette ads reads the Surgeon General's warnings. This should come as no surprise since any message presented exactly the same way will soon become so familiar that it will lose its effectiveness.[18-19] Furthermore, since cigarette companies vary the copy of their advertisements to avoid the "wear out" effect, it seems reasonable to conclude that the warning statement requries no less.

Brodsky and Myrowitz,[20] in a study of cigarette billboards, found the warning statement to be written uniformly on all billboards and in a manner similar to that used in newspaper and magazines. Individual letters in the warning consistently appeared the same, i.e., reduced detail. When compared with the detail and size of the letters in the brand name, the two largest observed warning statements were 38 and 17 times smaller. These two optometrists concluded from their test that while the brand name was visible, the warning was not.

This amply supports the need for varied warning statements in a format that is visible. However, the Tobacco Institute[21] in response to the FTC Staff Report, argued that the effectiveness of the cigarette advertisement and warning statement must be judged by different criteria. The rationale is that "the former (advertisement) must achieve consumer recall for a particular brand among numerous other brands, all of which present competing and conflicting messages while the latter (warning) appears consistently to the consumer in every advertisement and on every pack of cigarettes." This dual criteria is not only unsupported but unsupportable. If the warning statement has been "remarkably effective" by being presented consistently the same way then it would seem that brand recall would be enhanced if the portrayed image was maintained unchanged over the years. For example, the Marlboro advertisement should be most effective if the original ad copy was continued. Yet, the copy is changed and changed frequently. Different cowboys are used in different settings. Additionally, Brown and Williamson made several changes in its very successful Barclay campaign last year.

The Tobacco Institute also noted that cigarette advertising uses a multitude of images to appeal to different markets. This is indeed consistent with the concept of market segmentation. The logical extension of this is that the warning must also be tailored to appeal to differing consumers. For example, smokers with a history of heart disease in their families may find a warning on smoking and heart attack much more personally relevant than a general message.

Moreover, the argument that cigarette advertising is limited to the print media while consumers are exposed in all media to information on the hazards of smoking is misleading. The number of anti-smoking PSA aired on television since the ban on cigarette commercials has been drastically reduced with hardly any being shown during prime time. Additionally, information on smoking and health in the print media has been equally scarce. It has even been suggested by some[22-23] that the tobacco industry may be using its advertising as a leverage to discourage coverage on the hazards of smoking in the print media. For whatever reason, the broadcast and print media is largely inaccessible for informing the public of the dangers of smoking.

Meanwhile, the so called brand advertising goes on at the tune of one billion dollars per year.[17] Regardless of the intent, non-smokers and children are heavily exposed to this advertising. It would be very difficult to argue convincingly that some non-smokers, especially children and teenagers, are not affected by this constant portrayal of smokers as being young, attractive, healthy and enjoying an adventorous and pleasurable lifestyle. With this kind of bombardment with no effective counter, it is not hard to understand why 53% of smokers do not know or believe that smoking causes many cases of heart attack.[24]

For the above reasons, the warning label becomes a very important medium to get more information to the public. The American Heart Associaton has made and will continue to make efforts to better inform the public about hazards of smoking. However, we do not believe that we have adequate access to the media to fully inform the public. Our efforts will have a greater chance of success if the clearly deceptive intention of cigarette advertising is attenuated by including an effective warning. The warning is yet another way, at no cost, in which the federal government can effectively assist the private sector in educating the public about the hazard of cigarette smoking.

Therefore, the American Heart Association strongly supports the adoption of the six specific warnings proposed in H.R. 4957. We further propose the incorporation of the "circle and arrow" format, recommended by the FTC[17], to display the warning on advertisements. This format would significantly enhance noticeability of the warning. Finally, requiring that the warning letters measure at least 25% of the maximum brand name letters and be of the same proportionate detail would much improve its visibility.[18] These simple measures, at no cost, would contribute greatly to the education efforts of the private sector.

1. American Heart Association, 1981 National Annual Report National Center: Dallas, Texas 1981

2. American Heart Associaton, Heart Facts: 1982 National Center: Dallas, Texas 1982

3. Kannel, W.B.; Doyle, J.T.; Fredrickson, D.T. and Harlan, W.R. Report of the AD Hoc Committee on Cigarette Smoking and Cardiovascular Diseases: For Health Professionals; No: 71-001-B American Heart Association; Dallas, Texas 1977

4. Shurtleff, Dewey; Some Characteristics Related to the Incidence of Cardiovascular Disease and Death: Framingham Study, 18 year Follow-up. Framingham Study; Section 30; DHEW Publication No. (NIH) 74-599, February, 1974

5. Weiss, N.S. "Cigarette Smoking and Arteriosclerosis Obliterans: An Epidemiologic Approach". American Journal of Epidemiology 95(1): 17-25, 1972

6. Weinroth, L.A. and Herzstein, J. "Relationship of Tobacco and Smoking to Arteriosclerosis Obliterans in Diabetes Mellitus." Journal of the American Medical Association 131(3): 205-209, May, 1946

7. Kannel, W.B. "Epidemiologic Studies on Smoking in Cerebral and Peripheral Vascular Disease" in Wynder, E.L.; Hoffman, D; Gori, G.G. (Editors). Proceedings of the Third World Conference on Smoking and Health. DHEW Publication No. (NIH) 76-1221. I:257-274, 1976

8. Doll, R. and Peto, R. "Mortality in Relations to Smoking: 20 Years' Observations on Male British Doctors." British Medical Journal 2 (6051): 1525-1536, December 25, 1976

9. Gordon, T.; Kannel, W.B.; McGee; Dawher, T.R.; "Death and Coronary Attacks in Men After Giving Up Cigarettes: A Report from the Framingham Study," Lancet 2:1345-1348, December 7, 1974

10. Koch, A. "Smoking and Peripheral Arterial Disease," In: Wynder, E.L.; Hoffman, D; Gori, G.B. (Editors) Proceeding of the Third World Conference on Smoking and Health. DHEW Publication No. (NIH) 76-1221 I: 281-283 1976.

11. Kannel, W.B.; Doyle, J.T.; Frederickson, D.T. and Harlan, W.R.; Report of the Ad Hoc Committee on Smoking and Cardiovascular Diseases No. 51-028-A, American Heart Association: Dallas, Texas 1974

12. Office on Smoking and Health, "Highlights From the 1980 Supplement to the National Health Interview Survey," May 1981

13. The Roper Organization, A Study of Public Attitudes Toward Cigarette Smoking and the Tobacco Industry in 1978, Volume 1, May 1978

14. Public Health Service, The Health Consequences of Smoking - The Changing Cigarette: A Report of the Surgeon General, U.S. Department of Health and Human Services, 1980

15. Maxwell, J.C. "Cigarette Sales Up in 1981", Advertising Age, p. 77, December 7, 1981.

16. Castelli, W.P.; Dawber, T.R.; Feinlief, M.; Garrison, R.J.; McNamara, P.M. and Kannel, W.B. "The Filter Cigarette and Coronary Heart Disease: The Framingham Study," Lancet 2 (8238): 109-113, July 18, 1981

17. Myers, M.D.: Iscoe, C.; Jennings, Carol; Lenox, W; Minsky, E. and Sacks, A. Staff Report on the Cigarette Advertising Investigation Federal Trade Commission May, 1981

18. Kaufman, "Memory Without Recall, Exposure Without Perception," Journal Advertising Research, August, 1978

19. Craig, et al "Advertising Wearout: An Experimental Analysis" Journal of Marketing Research, November, 1976

20. Brodsky, L.P. and Myrowitz, Elliott "Visibility of Smoking Warning on Cigarette Billboards, American Journal of Optometry and Psysiological Optics 58 (2): 117-124, February, 1981.

21. The Tobacco Institute. Comments of the Tobacco Institute on the FTC Staff Report on Cigarette Advertising Investigation Washington, D.C., 1981

22. Smith, R.C. "The Magazines' Smoking Habit" Columbia Journalism Review 16 (5): 29-31 January-February, 1978

23. Whelan, E; Sheridan, M; Meister, K. and Mosher, B. "Analysis of Coverage of Tabacco Hazards in Women's Magazines." Journal of Public Health Policy

24. The Roper Organization Ommilus Study #726 for the Federal Trade Commission, 1980

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Mr. **Waxman.** Dr. Cahan.

STATEMENT OF WILLIAM G. CAHAN

Dr. **Cahan.** I first thank you for the privilege and honor of testifying before this committee. I would like before my testimony begins to submit two periodicals which I think would be of importance. One is titled, "Cigarette Smoking Among Tennagers and Women." Another is called, "Dangers of Smoking, Benefits of Quitting."

Mr. **Waxman.** We will be pleased to receive those.

Dr. **Cahan.** For 40 years I have been associated with Memorial Sloan-Kettering Cancer Center. It is the earliest cancer institute in this country. It is one of the most prestigous. The last 33 years of those 40 I have been a chest surgeon on the thoracic service, dealing a great deal with malignant tumors of the chest and thoracic cavity.

Cancer is an extraordinary disease. It's awesome and awful. There is hardly any among us that has not been touched one way or another either by family or friend with this particlar disease so we have had some inkling that there is that extraordinary alteration in one's life, one's hopes, one's dreams by its onset. All the statistics we have been hearing are certainly suggestive of the connection between smoking and cancer and other diseases. What is often lost in numbers I think is the human element which presents itself to us who are in the world of cancer as a daily diet, if you will.

If you have sat where I have sat seeing patient after patient with her or his cancer, and seen the destruction this makes in their lives, you would I think become dedicated, to trying to find out what the mechanisms are and how you can prevent these disasters.

In this 30-year period we have seen many changes in cancer which I think are germane to this discussion. For one thing we have seen a little over 30 years ago the reintroduction of cigarette smoking as a possible cause. It's hard to believe in this day and age, that in those days people were very skeptical, suspicious of and rather reluctant to believe the connection.

Since that time, we have seen an extraordinary maturation of this idea until there is an unequivocal relationship. Other observations made in this time period that even with the improvement of surgical and radiation therapy we are still unable to cure many cancers, in particular, cancers associated with the cigarette smoking habit.

For example, at our best we can cure one in three lung cancers. But unfortunately, the overall average is just 1 in 10.

Again, in the same period of time, we have seen that which you have already heard from other panelists, the remarkable rise in the incidence of women's lung cancer. Where we used to have a ratio at Memorial Sloan-Kettering Cancer Center of at least 12 males to 1 female, this is now almost even in a short period of 15 years and bodes well to pass the men in incidence. These are not women who work as "Rosey the Riveter" or in industrial hazards. These are housewives, office workers, teachers, and the like for whom there cannot be, I think by any stretch of the imagination, the equivalent of a man's exposure to industrial exhausts.

We are familiar with a well-popularized cigarette slogan mentioned today. I would like to paraphrase it and have it read, "You have come the wrong way, baby."

In any event, I thought it might be of interest to you if I presented an X-ray of a chest showing a cancer of a lung in a woman. I will put it on the viewing screen. This 59-year-old woman, wife, grandmother, mother, with all the reasons in the world to stay alive, was a heavy smoker for 20 or more years. By definition, heavy smoking is a pack a day for 20 or more years.

She was very careful to have periodic chest X-rays to monitor her condition and each time a negative chest X-ray came from her office she breathed a sigh of relief and went out and kept smoking. Her family was naturally quite concerned about this and tried to stop her.

One day she coughed up a little blood and had this chest X-ray taken. She came to my office, bringing it with her, as have so many thousands. This is a chest X-ray showing the heart, the ribs, and her left lung which is on this side and appears normal.

What I would like to draw to your attention is the shadow in the right upper lobe of her lung. She sat there—and the drama is repeated over and over again—looking at her own X-ray with that shadow. She smoked until the day she came to my office, and saw her own particular tragedy in the making and stopped on a dime.

Trying to stop people from smoking is one of the most difficult problems we have to face today. There are many methods: physicians' advice, smoking clinics, acupuncture, hypnosis, and so forth.

But we have a better than 90-percent take on stopping people from smoking when they view their own chest X-ray and see the shadow for the first time. This is the hard sell, but by then, the horse has left the stable.

What we are talking about, is to avoid reaching that particular point, by any and all means.

Another major problem is the question of children smoking. We have already heard about this today but I want to give you the cancer point of view.

We are now more and more aware that growing tissues are more sensitive to carcinogens, cancer-forming agents, than are adult tissues. We have seen ample evidence of this in children who to be irradiated for a large thymus and then went later on as adults to develop thyroid cancer in the field of radiation. We have also seen it in children who had radiation of benign bone tumors and later developed cancers at the irradiated site.

Similarly, young tissues exposed to carcinogens in tobacco smoke might well be more sensitive to them and more liable to develop cancer. If that is the case, and we think it is, we have a dismal projection to make; within 25 to 35 years in consideration that children are smoking at an earlier age, we can expect an enormous epidemic, of lung cancer and smoking-related diseases, particularly in women.

I try to stop people at all times from smoking, anywhere and everywhere. I have often said I have been invited to the best of houses once. I think I have also been quoted as saying I have saved more lives at dinner tables than I do at the operating tables—which is no reflection on my surgery but it is a form of prevention of it.

In discussing the labels Mr. Bliley, you made a point: after all we already have a label and if we change the label, what difference would it make, I think in the cessation of smoking we need many, many efforts to create a climate. Some are general and some are very personal. I think somebody picking up a cigarette packet and lighting it each day with a warning that is more than the present slap on the wrist would be much better alerted than the ones we presently have.

In short, cancer is a dread disease. Any of you who have had contact with it can bear that out beyond belief. You have heard Amanda Blake discuss hers, you have heard John Forsythe talk about his family members. If there is any way at all within the realm of the law to prevent it, it would be doing a great act of humanity for the rest of the people of this country.

Thank you very much.

[Testimony resumes on p. 182.]

[Dr. Cahan's prepared statement and periodicals follow:]

TESTIMONY OF WILLIAM G. CAHAN, M.D.

Mr. Chairman, members of the Committee, I feel privileged to be here today to testify on behalf of the American Cancer Society, a voluntary health organization with over 2 million active volunteers, dedicated to fighting cancer. Because of the mandate of the American Cancer Society it is most fitting that we offer our testimony in strong support of H.R. 4957, the Comprehensive Smoking Prevention Education Act of 1981.

I am Professor of Surgery at the Cornell University Medical College, and serve as attending surgeon, The Thoracic Service of Memorial Hospital, in the Memorial Sloan-Kettering Cancer Center. I am a long-time active volunteer of the American Cancer Society. I have served as a Member of the Committees on Tobacco and Cancer of the Society's National Board of Directors, and currently serve on the Society's Ad Hoc Committee on Tobacco Habituation.

I feel that I can address the problem of tobacco and cancer from a rather special perspective. In addition to my interest in Thoracic surgery, I have also had an intense interest in clinical research. I conducted some of the early research experiments in animals which established the causal relationships between smoking and cancer.

I would like to commend you, Mr. Chairman, for your leadership and your foresight in sponsoring this important preventive health care measure. I would also like to say how pleased I am to be able to testify as part of this distinguished panel. The work that the American Cancer Society will be doing on this bill together with the American Heart Association, the American Lung Association and the National Interagency Council on Smoking and Health, is, I hope, just the beginning of a coalition dedicated to educating Americans to the dangers of smoking. We are all extremely excited about the potential impact on the smoking problem in this country resulting from the joining of forces of our organizations. The reason we are testifying together is to underscore the amount of energy that our organizations are willing to exert to encourage this vital health effort.

The reasons for our dedication are clear. Today, 54 million Americans will light up a cigarette and we know that smoking will contribute to the death of over 300,000 of them this year alone. 430,000 Americans will die from all forms of cancer in 1982. According to the February 22 Surgeon General's report on the Health Consequences of Smoking 129,000 of those deaths will be caused by the use of tobacco products.[1]

85% of the 111,000 lung cancer deaths this year will be smoking related. We know from the Surgeon General's report that the overall cancer death rates of male smokers are approximately double those of nonsmokers and for female smokers the death rate is approximately 30 percent higher.

The Surgeon General found that cigarette smoking was a major cause of lung, laryngeal, oral cavity, and esophageal cancer. It was also found to be a contributory factor to bladder, kidney and pancreatic cancer. In addition, he noted that epidemiological studies suggest an association between cigarette smoking and stomach cancer to a possible association between smoking and uterine and cervical cancer.

What is even worse, those cancers most closely associated with cigarette smoking (lung, esophageal, laryngeal, oral cavity and pancreatic cancer), can be the most difficult ones to treat, the cancers with the least hope for survival. For example, the overall 5-year survival rate for lung cancer is only 10%; for cancer of esophagus, 4% and for cancer of the pancreas, 2%.[2]

When the Surgeon General released his report on February 22 of this year, the President of the American Cancer Society, Dr. Robert Hutter, said:

> "When we hear of a bad accident involving 20 or 30 people everyone is horrified and officials start clamoring for more consumer protection. Here we have a situation in which two to three hundred people a day are being killed by tobacco-related cancers and these people have been given virtually no protection at all."

As a physician who must care for victims of cigarette smoking, I can state with conviction to the members of this committee that dying from lung cancer is one of the most awful experiences a human being can go through. To permit people to kill themselves this way without making the hazards amply clear is an irresponsible act that we, as doctors, and you, as legislators, must not allow to continue.

The American Cancer Society strongly supports the efforts of the sponsors of this legislation to maintain a formal Office of Smoking and Health. Such an office dedicated solely to educating Americans to the dangers of smoking and, in addition, working to eliminate the American smoking habit is vital to the voluntary health sector in real terms as well as symbolically. We need a group of knowledgable professionals at the federal level in such an office committed to this cause.

We are also pleased that the Chairman has shown an interest in adding to his legislation an amendment which would require that all cigarette companies list with the Secretary of HHS all tobacco additives. We are not asking that the trade secrets in the tobacco industry be revealed. However, the ACS questions why the cigarette industry has, for so long been exempt from any requirement to list their additives when most other consumable consumer goods have not had such an exemption.

In addition, we are well aware that cigarette smoking is dangerous. It is vital, that at the very least, government scientists be given an opportunity to test the health impacts of burning and inhaling such flavoring additives as cocoa husks. The scientific and medical communities must also be allowed to test these additives so as to protect the 54 million smokers and for those other millions whom we are not reaching through education efforts who may yet start to smoke.

I know the labeling provisions of the legislation raise some questions. I cannot say for sure that six rotating labels listing exactly the ill effects of cigarette smoking will make the difference. I can say that in 1979 13.5% of boys aged 15 and 16 and 11.8% of girls that age are regular smokers. I can say that at ages 17 and 18, the incidence increases to 19.3%

for boys and 26.2% for girls. Also, the percentage of girls age 17 and 18 who smoke has risen sharply since 1974. One further point, by 1983, according to statistics from the National Cancer Institute, lung cancer will outdistance breast cancer as the number one cancer killer of women.[3]

Our children are risking their lives, possibly because of clever advertising, combined with the various reasons that influenced so many people to begin smoking years ago: peer pressure, peer imitation, saying it looks so sophisticated, grown-up, etc. At the very least, we must give them the best information about the hazards of cigarettes to permit them to make an informed decision. An FTC staff study came to the following conclusion:

> "...many [smokers] are unaware of the existence of the relationship between smoking and some of its most serious and widespread health consequences, such as heart disease...Some of the health consequences of smoking, such as lung cancer and emphysema, are more well known. However, even for lung cancer, the most well known health effect, some substantial gaps in consumer knowledge are evident."[4]

We have an obligation to fill those gaps, especially for the young. Amanda Blake has told us she would not have smoked had she known clearly what could happen to her. How many of those 17 year old girls who are lighting up a cigarette today comprehend that they could get oral cavity cancer and would have to undergo the difficult and painful rehabilitation that is necessary to overcome the disabilities associated with that disease. Not enough!

Mr. Chairman, the Congress's own research agency, the Office of Technology Assessment, in its ASSESSMENT OF TECHNOLOGIES FOR DETERMINING CANCER RISKS FROM THE ENVIRONMENT, dated June 1981, states that tobacco smoking "is the single most important preventable environmental factor contributing to illness, disability, and death in the United States." The OTA report sites a WHO reference stating "smoking-related diseases are such important causes of disability and premature death in developing countries that the control of cigarette smoking could do more to improve health and prolong life in these countries than any single action in the whole field of preventive medicine."

Further, the OTA report adds, "tobacco is know to contribute more heavily to the number of cancer deaths than any other single substance."

Members of this Committee, I urge you and your colleagues in both Houses of the Congress to pass this measure into public law as quickly as your considerations and processes will allow. The American Cancer Society and I believe this bill can make a difference to the health of our country. We look to you to help us in this crusade!

1/The Health Consequences of Smoking -- Cancer --, A Report of the Surgeon General, U.S. Department of Health and Human Services, Office on Smoking and Health, February 22, 1982, p. 4-7.

2/ 1982 Cancer Facts & Figures, American Cancer Society, Inc., p. 19.

3/ Dangers of Smoking, American Cancer Society, Inc., 1980, p. 57 & 66-68.

4/ Staff Report on the Cigarette Advertising Investigation, Federal Trade Commission, May, 1981, p. 3-45.

CIGARETTE SMOKING AMONG TEEN-AGERS AND YOUNG WOMEN

U.S. DEPARTMENT OF HEALTH
EDUCATION, AND WELFARE
Public Health Service
National Institutes of Health

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Note: The findings reported in this pamphlet are part of an extensive research project on smoking among teen-agers and young women conducted in 1975 for the American Cancer Society by Yankelovich, Skelly and White, Inc.

Why do some teen-age girls and young women smoke, while others do not smoke? This is a major question facing the antismoking forces in the country. For all around there are signs that even as the adult population of the country is beginning to curtail its cigarette smoking, the nation's young, specifically teen-age girls and young women, are now more likely to smoke and to smoke more than in the past.

Many theories have been developed to explain this phenomenon, including; the women's liberation movement, the increased number of young women entering the work place, and the intensive advertising efforts of the cigarette industry targeted at this audience.

Yet, little specific information has been available from the young people themselves—including the extent of their cigarette smoking, who are the smokers and nonsmokers, their attitudes towards and motivations for smoking, and most important of all—present and potential barriers to cigarette smoking.

With the belief that this kind of information was vital not only to their own antismoking efforts, but to concerned parents, educators, public health officials, community leaders and government authorities, the American Cancer Society sponsored this study. It's purpose is not merely to assess the incidence of cigarette smoking among these groups, but to understand the dynamics of what is occurring and what steps the American Cancer Society and other antismoking forces can take to reverse this trend.

How the Study was Conducted

4

The study was carried out in three phases:

Phase I: A Literature search of articles and research studies concerning cigarette smoking among teen-agers and young women.

Phase II: Focused group discussions with both teen-agers and young women—smokers and nonsmokers—for the development of initial hypotheses and the development of the questionnaire.

Phase III: The study itself is based on a national representative sample of 3,009 households, from which were selected projectable subsamples of respondents for the following groups:

Young Women

(18 to 35 years of age)

Total	**559**
Smokers	227
Nonsmokers	227
Former smokers	105

Teen-age Girls

(13 to 17 years of age)

Total	**267**
Smokers	125
Nonsmokers	142

Teen-age Boys

(13 to 17 years of age)

Total	**246**
Smokers	127
Nonsmokers	119

In all, a total of 1,072 teen-agers and young women were interviewed in their homes with a lengthy and detailed questionnaire. In no case was more than one respondent interviewed per household. Interviewing took place during the months of October and November, 1975.

Summary

The results of the study point to several important trends and some surprising findings.

1. Cigarette Smoking Is On The Rise Among Teen-Age Girls:

From 1969 to 1975, cigarette smoking among teen-age girls has increased at the rate of 23%. Today, 27% of all teen-age girls smoke cigarettes either occasionally or heavily compared to only 22% in 1969. Translated into people, this increase means that half a million more teen-age girls are now smoking. During this same period of time, however, cigarette smoking among boys levelled off and remained at the 30% level. What has clearly happened is that teen-age girls have nearly caught up with their male counterparts. (See Chart I).

2. Teen-age Girls and Young Women Are Smoking More Heavily Than In The Past:

During this same period of time, pack-a-day-or-more smoking has increased fourfold among teen-age girl smokers. In 1969, 10% of all teen-age girl smokers smoked at least a pack a day compared to 39% now. Boys, on the other hand, continued to smoke at the same levels as before.

The smoking scene among young women more closely duplicates the pattern for teen-age girls. For while smoking incidence has shown only a slight increment among young women (34% in 1965; 36% now), the proportion of heavy smokers—particularly really heavy smokers—has accelerated sharply. According to the United States Health Survey, conducted in 1965, one out of two young women smokers (51%) were smoking at least a pack of cigarettes a day. By 1975, the figure was 61% with the sharpest increase among the more-than-one-pack-a-day group (up from 9% in 1956 to 25% now).

Currently, then, the locus of the smoking problem is among teen-age girls and young women. (See Chart II).

3. Yet, The Antismoking Message Has Been Heard:

This increase in the numbers and intensity of cigarette smoking among young women and teen-age girls has occurred at a time when these young people were at least intellectually fully aware of the hazards of smoking.

For a substantial majority of the group the message has come through loud and clear:

- Smoking is as harmful for women as for men (74% teen-age girls; 80% young women).
- Smoking is as harmful for young people as well as for older people (71% teen-age girls; 71% young women).
- It is not safe to smoke low tar cigarettes (56% teen-age girls; 54% young women).
- Smoking during pregnancy can harm the fetus (56% teen-age girls; 62% young women).

Among young smokers, 56% of the teen-age girls and 62% of the young women believe wholly or in part that smoking is as addictive as illegal drugs. (See Chart III). Yet they still smoke and start to smoke in greater numbers and with more frequency than in the past.
The question is why? These trends help to explain the reasons:

4. The All Pervasive Smoking Environment:

While young people continue to be aware of the antismoking message, the situation all around them and their own perceptions of who and how many people smoke more than counterbalances the impact of what they have seen, heard or read about the dangers of smoking.

For example, among teen-age girl smokers:

- 82% of all teen-age girls think of teen-agers as smokers rather than nonsmokers.
- Two out of three believe that more women are smoking now than a few years ago.
- 72% of the girls with boyfriends report that their fellows are smokers.
- 66% say that half of their friends or more smoke.
- 87% smoke with their parents' knowledge; 34% with their parents' approval.
- 84% have fathers who smoke or smoked; 64%, mothers.

Add to this the fact that:

- 49% of the teen-age girls who smoke report that their schools have special "smoker" rooms where it is permitted to light up during the school day.
- And 68% of the teen-age girls who smoke indicate that their own doctors have not warned them against smoking.

5. Fewer Antismoking Commercials:

Another key factor too, is that awareness of antismoking television commercials, has been cut drastically as a result of the retrenchment of free matching time following the barring of cigarette advertising on television. In 1969, 88% of all teenagers reported that they had seen or heard an antismoking television commercial in the past 4 weeks. Currently, only 48% are exposed to this type of television spot. On the other hand, the kinds of people identified with cigarette advertising include the following:

attractive,	sexy,
enjoying themselves,	young,
well dressed,	and healthy.

(See Chart V).

6. Changing Moral Norms:

Further bolstering the impressions of the all pervasive smoking environment and especially helping to explain in part the sharp increase in smoking among teen-age girls, are the changes in the prevailing social norms. For compared to the teen-age girls, teen-age boys have changed less than the girls in their attitudes, needs and feelings about themselves as far as these relate to smoking.

With teen-age boys, cigarette smoking continues to go hand-in-hand with social uneasiness, the need to be popular with the opposite sex, the urge to prove one's masculinity. It is an intrinsic part of adolescent boy rebelliousness—as it has always been.

With teen-age girls, the picture which emerges is very different. For in this instance a real change has occurred in the prevailing social norms and the differential between boys and girls has been blurred.

The teen-age girls, for example, are socially considerably more at ease with their own peers, more "sophisticated" than their male peers, and less in need of social props. Indeed, the rebelliousness against adult society—once far more the province of the boys—is now very much a part of the girls' environment as well. Girls are joining in with the boys and smoking pot, drinking alchohol and getting in trouble with the authorities. It is not just in cigarette smoking that the teen-age girls are catching up with the boys.

7. The New Values:

In general, the teen-age girls have been more influenced by the new youth values than the boys. These "New Values", originally generated by college youth in the sixties and now permeating the majority of all young people[1] represent the breakdown of previous moral norms and are characterized by the rejection of authority, emphasis on the emotional rather than the rational, freer sexual morality, a strong accent on self and self-fulfillment, the acceptance of illegal drugs and a more informal life style.

The new youth values do not necessarily cause more young people to smoke—but they make it easier to do what one wants to do and to resist arguments against doing it.

---

[1] "The New Morality" by Daniel Yankelovich, McGraw-Hill, 1974.

8. Opportunities for Change:

Yet, interestingly, opportunities for curbing smoking among young people are also intrinsically tied in with these same new values. For the very emphasis on the importance of self, the need to be an independent thinker, the importance of physical well-being can provide more effective incentives against smoking than the more traditional threat of future health hazards. These, then, are the major trends revealed by the study. What follows in capsulated form, are additional significant and interesting findings relating especially to the increased incidence and volume of smoking among teenage girls and young women.

I: The Teen-age Smoker

a) The Self-Confident Teen-age Girl Smoker: Even among her girl peers, the teen-age girl smoker stands out as more confident, outgoing and very much at ease in her own social grouping.

Parties are her metier. One measure of both her sophistication and her value structure is the fact that 31% of the girl smokers (ages 13 to 17 years old) have already had sexual relations. Instead, it is the teen-age girl nonsmoker who tends to be quieter, have less self-confidence, or self-esteem, and is shy with the boys. The nonsmoker is a more devoted television viewer and reader. Sexually, too, she is far less precocious than the smoker. Slightly more than a third (38%) have boyfriends and just 8% have had sexual relations. (See Chart VII).

b) Rebelliousness and Smoking: Cigarette smoking among teen-age girls, however, does appear to be highly identified with an antiauthority, rebellious syndrome in terms of the adult world. This cuts across parents, school, institutions—and even impacts receptivity to antismoking messages emanating from adult authorities.

- One out of two of the teen-age girl smokers (53%) are annoyed by the so-called experts who tell them what is good for them (34% teen-age girl nonsmokers).
- Half of the teen-age girl smokers agree that there is too much regulation of people's lives (39% nonsmokers).
- Almost half of the teen-age girl smokers want to do something entirely different from what their parents want them to do (26% nonsmokers).

- One out of three of the teen-age girl smokers (32%) hate school (16% nonsmokers); 29% have been suspended or expelled from school compared to 4% of the nonsmokers.

c) **Cigarette Smoking, Alchohol, and Marijuana:** An even more overt indication of the rebellious nature of the teen-age girl smoker is her use of alchohol and marijuana:

- Among teen-age girl smokers, 81% drink alcohol compared to 42% of their nonsmoking girl peers.
- Almost a third of the teen-age girl smokers (32%) sometimes drink to get drunk compared to 4% of the nonsmokers.
- One out of four of the girl smokers (25%) use marijuana compared to only 3% of the nonsmokers.

Among teen-age boy smokers, the same trends are apparent. Yet for all of these current forms of rebellion, the old wood shed image of smoking as a symbol of assertiveness apparently lingers on among teen-age smokers—while the concept of nonsmoking as proof of nonconformity or rebellion against the adult world, society, advertising or big business has not caught on. (See Chart VIII).

d) **Smoking as a Social Asset:** For the teen-age boy smokers out to prove their masculinity, cigarettes are still regarded as a social asset. This is not the case, however, with the teen-age girl smokers. Instead a majority (52%) consider smoking to be a social drawback. This may make it easier for her to quit—but is also one other sign of her flaunting and rebellious spirit. (See Chart IX).

e) A Permissive Adult World: Smoking as a form of adolescent rebellion becomes more difficult to comprehend in a society in which many adults take a very lenient, if not tolerant posture, regarding teen-age smoking. Parents know about their teen-age daughters smoking (87%) and 34% condone it. Many schools are providing special "smoker" rooms in line with changing times—even though there are signs that the availability of legal smoking places in the school plant appears to be directly correlated with an increase in teen-age girls smoking. Among teen-age girl smokers, 49% report that their schools have regular smoking areas compared to 32% of the nonsmokers. (See Chart X).

f) Doctors and Smoking Among Young People: Nor do most members of the medical profession play an active role as antagonists of smoking among young people. For example, 70% of the teen-age girls and 73% of the young women report that their personal doctor or clinic has not cautioned them at all about the dangers of smoking.

g) Peer Pressure: Peer relationships, long identified as a major factor in teen-age smoking, continue to operate as a dominant influence with teen-age girl smokers, for example, flocking together.

- Among teen-age girl smokers, 69% report that half or more of their male friends and 66% report that more than half of their female friends smoke. Among teen-age girls who do not smoke, only 32% claim that half of their male friends smoke and 19% more than half of their girl friends smoke.

- Generally too, among the girls and young women, smokers usually come in pairs.

- 72% of the teen-age girl smokers have boyfriends who smoke compared to 27% of the nonsmokers.

- 68% of the young women smokers have boyfriends or girl friends who smoke, compared to 41% of the nonsmokers. (See Chart XI).

h) Everybody Smokes: The all pervasive smoking environment, according to the teen-agers, is not limited to their families and friends—but to the whole world all around them. Most teen-agers—smokers and nonsmokers—consider smoking to be a majority phenomenon among their own peer group, as well as among most adults. Teachers, executives, housewives, feminist leaders—all are thought of as smokers. Doctors and athletes are the only two exceptions. (See Chart XII).

Then, too, there are the cigarette ads which help to reinforce the image of the cigarette smokers as attractive, (68%); enjoying themselves, (65%); well dressed, (62%); sexy, (52%); young, (50%); and healthy, (50%). (See Chart XIII).

i) The Smoking Rationale: Teen-age smokers, like adults, have developed their own rationale for continuing to smoke. Sure smoking is bad for you—but still and all:

- The dangers of smoking are exaggerated for my age group (52% teen-age girl smokers; 54% teen-age boy smokers).

- There's too much talk these days about things that are bad for you (43% teen-age girl smokers; 48% teen-age boy smokers).

- And then there's air pollution which is just as important a cause of lung cancer as cigarettes (teen-age girl smokers, 67%; teen-age boy smokers, 51%).

J) **Barriers to Smoking:** Teen-age girl nonsmokers divided into two almost equal groups—the Traditionalists and the Vulnerables.

It is easy to understand why the "traditionalists" do not smoke. They are strongly religious, respectful of authority, and not accepting the new values. They also shy away from their peers who smoke, drink or use marijuana.

The other group of nonsmokers, the "vulnerables" are very different, for they share many of the same values as the smokers, and are highly exposed to the total smoking environment.

On the surface, the vulnerables appear to be ready candidates for the next wave of new smokers:

- One out of two of the vulnerables report that half or more of their male friends smoke.
- A third indicate that at least 50% of their girl friends smoke.
- A majority of them have one or more parent who smoke, half have siblings who smoke.

Yet, the "Vulnerables" do not smoke.

Instead they have found, consciously or unconsciously, some strong barriers to smoking. These are:

- The importance of being in control of one's life.
- Emphasis on physical fitness and well being.
- Concern about the addictive nature of cigarettes.

- And, perhaps most of all by becoming militant antismokers—people who are angered by other smokers, upset by smoke filled rooms, and ready for increased regulation of smoking.

In other words, they are finding a new cause and a peer identification. (See Chart XIV).

k) **Antismoking Education:** Many teen-agers have attended antismoking programs including 48% of the teen-age girl smokers and 49% of the nonsmokers. A large majority (84%) have found them meaningful, including, however, most of those who are now smoking. The problem is one of timing. Six out of ten girl smokers, for example, have started to smoke before they are thirteen years of age—but have only attended smoking education classes or programs in the seventh, eight, ninth, or tenth grades of school when it is already too late. (See Chart XVI).

II: Young Women Smokers

a) **An Independent-Minded Group:** Many of the same qualities which distinguish teen-age girl smokers from nonsmokers are also apparent—but to a lesser degree—between young women smokers and nonsmokers. The women smokers also tend to be more social and outgoing, antiauthority and strongly subjected to the total smoking environment and "peer" pressure. Over two-thirds of all young women smokers (68%) have boy friends or husbands who smoke compared to less than half (41%) of the nonsmokers. Their friends also smoke—and they are somewhat more likely to have come from homes in which one or both of their parents smoked. Compared with their own nonsmoking peers, the young women smokers are readier to:

- Have fun now and forget about the future (46% smokers; 36% nonsmokers).

- Rationalize that everything you do these days seems to give you cancer (46% smokers; 32% nonsmokers).

- Feel that there is too much regulation of people's lives (41% smokers; 32% nonsmokers).

- Believe we are close to finding a cure for cancer (50% smokers; 45% nonsmokers).

Yet they also have one strong characteristic which could be used as an integral part of any antismoking effort—61% of the young women smokers express a strong need to be independent compared to 52% of their nonsmoking contemporaries. (See Chart XVII).

b. **Working Women:** Contrary to the theory that the increase in heavy smoking among young women is correlated with the greater number of women who are now employed, the findings of the study show that it is the housewives—not the working women—who are more likely to be the heavy smokers.

Among young women smokers, 39% are employed full or part time—and 61% are housewives (or unemployed or students). The pattern for nonsmokers is parallel (37% are employed; 63% are housewives). A look, however, at the incidence of heavy smoking—and the myth about cigarettes and working women is refuted.

- Among housewives who smoke, 66% are heavy smokers; among working women, 53% are heavy smokers.

Interestingly, it is also the working women who afford the best opportunity for converting smokers into nonsmokers, accentuating the desirability of antismoking campaigns directed at the workplace. (See Chart XVIII).

The myth about the Women's Liberation movement encouraging cigarette smoking is also not substantiated by the findings of the study for equal numbers of young women smokers (70%) and nonsmokers (69%) identify strongly or partially with the Women's Liberation movement.

c. **Smoking and Pregnancy:** A critical period to reach young women smokers is not only during pregnancy but in the months after the woman has given birth. A majority of young women smokers (62%) believe that smoking can harm the fetus. Even more important, during pregnancy, 67% of the smokers have either cut back (32%) or stopped smoking (35%). Unfortunately, however, the abstinence does not hold up—for here they are back smoking once again.

d. **Smoking and Children:** Several years ago, when antismoking commercials were far more widely available on television, young children were reported to be among the main crusaders against their mother's smoking habits. Today, over half of the young women smokers with children (56%) report that their children are bothered by their smoking—but there is little evidence that the children are as militant in their efforts as in the past. Among former smokers, for example, very few mention that their children were a major influence in getting them to quit.

e. **The Former Smokers:** While progress has been made in getting some young women to quit smoking—the main success has been among the light rather than the committed smoker. Most of these former smokers (63%) smoked less than a pack a day. There are, however, important lessons to be learned from the former smokers:

- Most did quit of their own accord, (50%), some were encouraged by their boy friends or husbands (28%), a handful by their doctors.

- One out of two used willpower rather than substitutes such as candy or gum.

- Almost none of this age group of young women smokers reported that they gained weight.

- Most found immediate gratification from quitting.

The feeling of being in control of one's life, an increased sense of physical wellbeing, the end of cigarette bad breath and smell, and money saved, proved to be stronger reinforcements than even the insurance they are buying against future disease and ill health. (See Chart XIX).

f. **The Potential for Quitting:** Most young smokers want to quit. Among young women, 70% can be classified as "potential quitters"—smokers who express concern over their smoking and some eagerness to quit. Among teen-age girls, 58% of the smokers can similarly be classified as "potential for quitting." (See Chart XX).

Only a minority, then, are committed to continued smoking. This group expresses little or no concern over their own smoking and tends to deny the dangers of the habit. Indeed, everything about the group suggests that they will strongly resist any or all attempts to get them to give up their cigarettes.

The potential quitters, on the other hand, are half way there, but still need help to conquer their smoking habits:

- Two out of three of the potential quitters (65%) believe that once you start smoking it is impossible to stop.

- A majority (60%) agree that smoking is as addictive as illegal drugs.

- Over half (57%) are worried about their weight.

- Two out of three (67%) have boy friends or husbands who now smoke, suggesting the need for more emphasis on "quitting couples."

- Potential quitters among the young women smokers also are more likely to be employed, pointing to the advantages of antismoking programs directed at the workplace.

They are also more involved with clubs and group activities again indicating the desirability of widespread antismoking efforts. Most of all, however, many of these potential quitters are asking for the help offered by more strict regulation of their own and other people's smoking.

Among the potential young women quitters:

- 55% believe that it is important to take special measures to protect our health.

- 49% want to see stricter regulations of where one can and cannot smoke in public.

- 31% want to see cigarette advertising in newspapers and magazines regulated.

They are, in other words, looking for allies and support from the all-important militant nonsmokers who support the same causes even more strongly.

Teen-agers and Young Women

The Plus Side

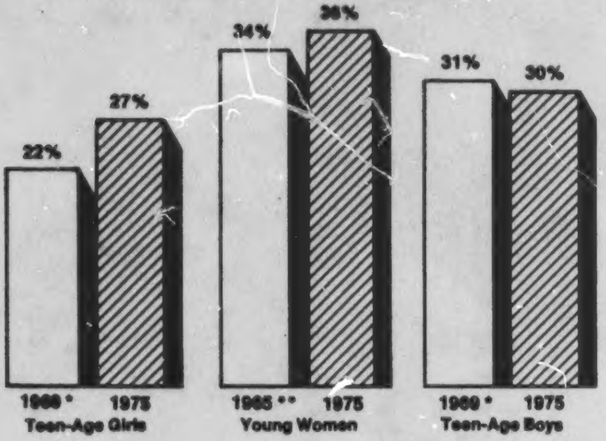
- Smoking is a minority phenomenon
- Teen-age girl smokers do not consider smoking to be a social asset
- Smoking is not a necessary social prop—at least for the girls
- The "evils" of smoking are known
- The militant nonsmoker—a new form of peer pressure
- Most smokers want to quit
- Most young smokers are not yet committed
- *The New Values:* emphasis on self, self-control, self-fulfillment
- Importance of physical appearance and fitness
- The example of the former smokers
- Pregnancy and smoking
- Children as allies
- Fear of gaining weight is not an inhibiting factor
- The readiness for antismoking regulation

The Minus Side

- The increase in smoking
- The all pervasive smoking environment
- "Everybody smokes" theory
- Health hazards are seen as exaggerated for teen-agers
- Relaxation of restrictions at home
- Boys still smoke to express their masculinity
- Smoking rooms in schools
- Cutback in television antismoking advertising
- Peer pressure; smokers come in pairs and groups
- Parents who smoke
- The advertised image of the smoker
- Doctors don't speak up
- *The New Values:* Antiauthority, emphasis on the emotional rather than the rational
- Belief that smoking is addictive makes quitting harder
- The problems of being a housewife encourages young women to smoke
- "The cure is just around the corner" crutch for smokers

Chart 1

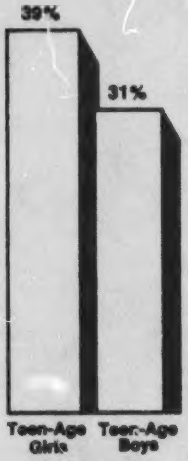
CIGARETTE SMOKING TRENDS



*1969 American Cancer Society
**1965 U.S. National Health Survey

Chart 2

THE GIRLS ARE SMOKING MORE THAN THE BOYS
Base: Cigarette Smokers



Smoke a pack
of cigarettes
a day or more

Chart 3

THE ANTISMOKING MESSAGE HAS BEEN HEARD

Base: Teen-age girls and young women

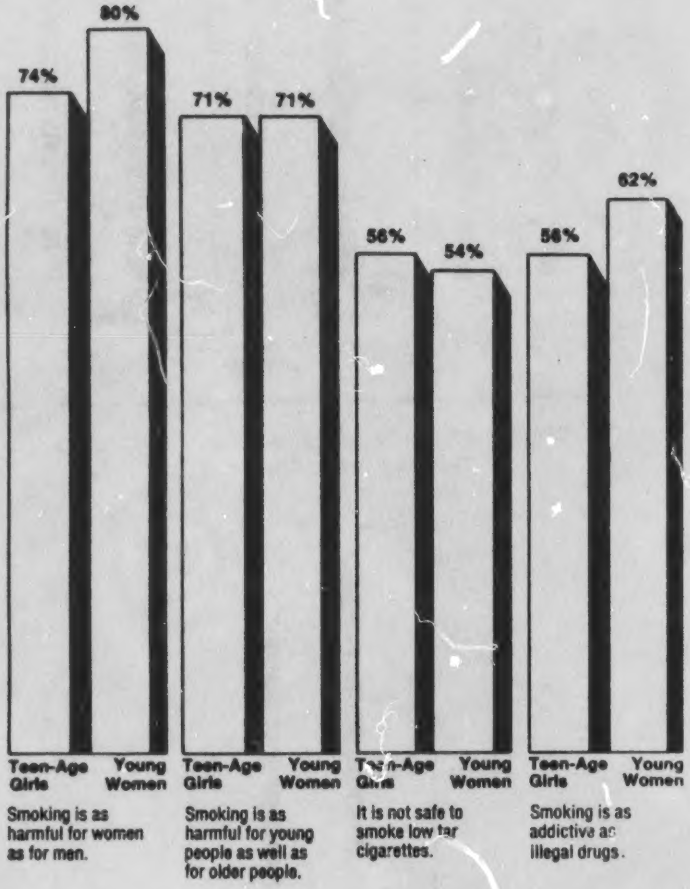
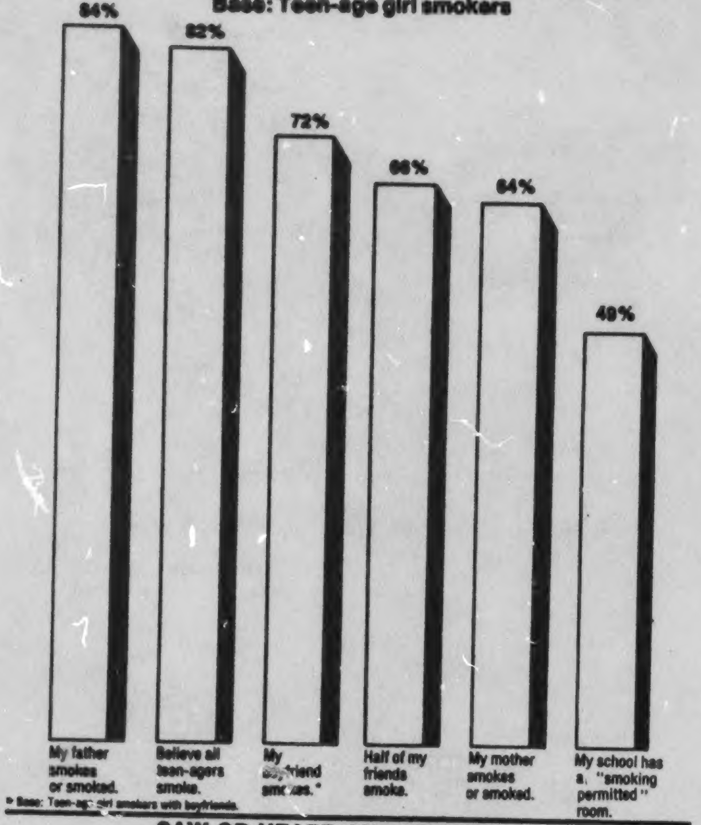


Chart 4

THE ALL PERVASIVE SMOKING ENVIRONMENT
Base: Teen-age girl smokers



* Base: Teen-age girl smokers with boyfriends.

Chart 5

SAW OR HEARD AN ANTISMOKING COMMERCIAL IN LAST FOUR WEEKS 1969-1975
Base: Teen-age boys and girls

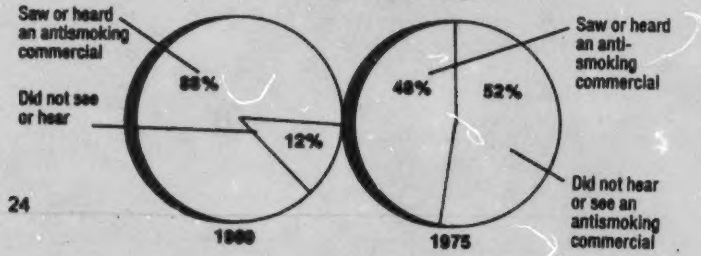


Chart 6

TEEN-AGE GIRL SMOKERS ARE MORE ADVANCED SOCIALLY THAN THEIR MALE PEERS

	TEEN-AGE SMOKERS	
	Girls %	Boys %
Going to parties and dances is a favorite leisure time activity	75	61
It's important to me to be popular with the opposite sex	48	61
Smoking is a social asset	37	56
Meeting new people and being in a new situation makes me nervous	32	45

Chart 7

THE SELF CONFIDENT TEEN-AGE GIRL SMOKER

	TEEN-AGE GIRLS	
	Smokers %	Nonsmokers %
Parties are a favorite leisure time activity	75	58
Have a boy friend	64	38
Reading is a favorite leisure time activity	36	61
I often feel I'm not very good at things	34	50
Meeting new people makes me nervous	32	46
I have had sexual relations	31	8

Chart 8

CIGARETTE SMOKING AND TEEN-AGE GIRL REBELLIOUSNESS

	TEEN-AGE GIRLS	
	Smokers %	Nonsmokers %
Drink alcohol	81	42
Sometimes drink to get drunk	32	4
Have been suspended or expelled from school	29	4
Use marijuana	25	3
Ran away from home	25	10

Chart 9

SMOKING AS A SOCIAL ASSET

	TEEN-AGE SMOKERS	
	Girls %	Boys %
Smoking is a social asset	37	55
Smoking is a drawback	52	31
Neither one/both	13	11

Chart 10

SCHOOLS WITH SMOKING AREAS

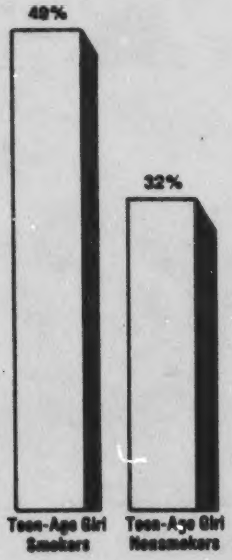


Chart 11

SMOKING AMONG PEERS

	TEEN-AGE GIRLS	
	Smokers %	Nonsmokers %
Boyfriend smokes	72	27
Half of male friends smoke	69	32
Half of female friends smoke	66	19

Chart 12

MOST TEEN-AGERS THINK ALMOST EVERYBODY SEEMS TO SMOKE

Usually Think of as Smokers Rather than Nonsmokers	TEEN-AGERS Girls %	TEEN-AGERS Boys %
Teen-agers	82	84
Women executives	69	70
Housewives	67	54
Feminist leaders	64	76
Doctors	30	30
Athletes	9	11
Teachers	68	67

Chart 13

KINDS OF PEOPLE SHOWN IN CIGARETTE ADS

	Teen-age Girl Smokers %
Attractive	69
Enjoying themselves	66
Well dressed	66
Sexy	54
Young	50
Healthy	49

Chart 14

BARRIERS TO SMOKING

How "Vulnerable" Teen-age Girl Nonsmokers Differ From Smokers

	Difference between "vulnerable" non-smokers and current smokers
I am the most antismoking person in my family	+++++
Being in a smoked filled room annoys me	++++
Believe smoking cigarettes is a serious health hazard	++++
Being around smokers is a serious health hazard	+++
Enjoy sports	++
Would welcome more emphasis on physical fitness	++
Support regulating smoking in public	++

Each + represents a 10% difference of "vulnerable" nonsmokers over smokers.

Chart 15

THE MILITANT NONSMOKER

	TOTAL NONSMOKERS	
	Teen-age Girls %	Young Women %
I find being in a smoke filled room very annoying	80	70
I favor regulating where smokers can and cannot smoke	58	65
I favor regulating advertising of cigarettes in newspapers and magazines	47	42
Being around people who smoke is a serious health hazard	29	30

Chart 16

MOST ANTISMOKING EDUCATION IS TOO LITTLE AND LATE

	TEEN-AGE GIRL SMOKERS %
Started to smoke before 13 years of age	60
Attended antismoking education program in school	48
Attended antismoking education in 6th grade (12 years old)	4

Chart 17

YOUNG WOMEN SMOKERS VERSUS NONSMOKERS

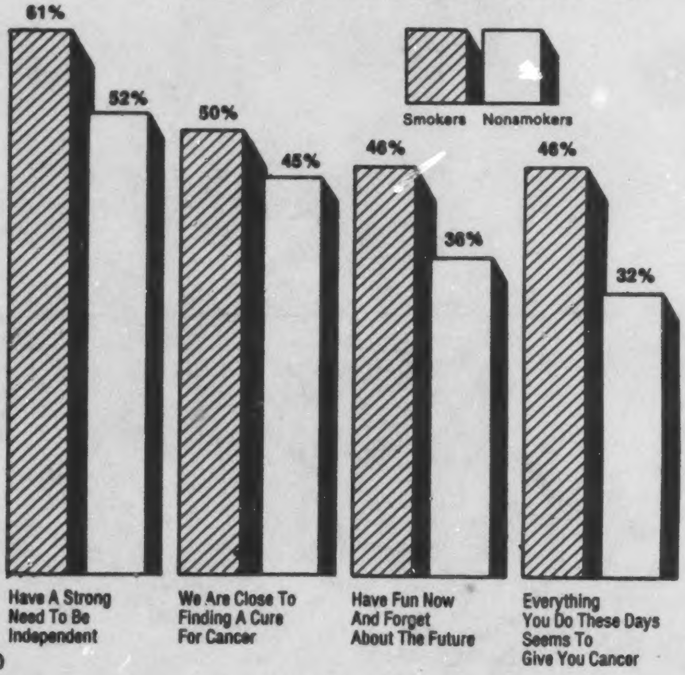


Chart 18

HEAVY SMOKING AMONG HOUSEWIVES VERSUS WORKING WOMEN

	Smoke A Pack Or More Of Cigarettes A Day %
Housewives	66
Working Women	53

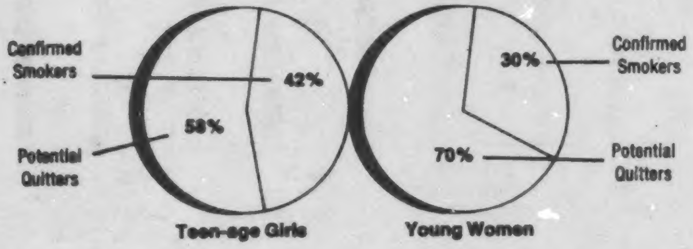
Chart 19

WHO ENCOURAGED YOU TO QUIT?

	%
No one/did on own	50
Husband/boy friend	28
Relative (parent, sister, etc.)	13
Doctor	3
Friends	2
Children	2
Other	2

Chart 20

POTENTIAL FOR QUITTING



*U.S. GOVERNMENT PRINTING OFFICE: 1977 241-161/3037 1-3

DANGERS OF SMOKING

* * *

BENEFITS OF QUITTING

& RELATIVE RISKS OF REDUCED EXPOSURE

REVISED EDITION

*

An up-to-date summary of the key scientific and medical studies, plus new information on economics, psychology, pharmacology and other aspects of tobacco smoking and health.

American Cancer Society, Inc.
777 Third Avenue, New York, New York 10017

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INTRODUCTION

Within the past 15 years, the habit of smoking tobacco—mainly in cigarettes—has been universally condemned by authoritative medical groups and government medical officers as a leading cause of death and a major public health problem in developed countries:

✱ "As important a cause of death as were the great epidemic diseases that affected previous generations in this country." [British Royal College of Physicians, 1971][1]

✱ "The largest preventable cause of death in America." [Secretary Joseph A. Califano, Jr., U.S. Department of Health, Education and Welfare, 1979][2]

✱ "No longer any doubt. . . . a major and certainly removable cause of ill-health and premature death." [World Health Organization, 1979][3]

The purpose of this booklet is to summarize the latest information about smoking and health, derived from thousands of epidemiological, biological, pharmacological, pathological and other studies.

The present booklet is an update of the one published by the American Cancer Society in 1972 under the title *"The Dangers of Smoking, The Benefits of Quitting"* which summarized key studies, books, and major surveys starting with that of the landmark report *Smoking and Health* of the Advisory Committee to the Surgeon General of the U.S. Public Health Service in 1964.

On the 15th anniversary of the famous 1964 report, January, 1979, the present Surgeon General, Julius B. Richmond, M.D., issued a new report titled *SMOKING & HEALTH* composed of 22 detailed scientific papers compiled by 12 agencies in the Department of Health, Education and Welfare and reviewed by scientists recognized as experts in the different fields.

The then Secretary of HEW, Joseph A. Califano, Jr., wrote in the introduction that the new report "demolishes the claims

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1. Smoking & Health Now, Report of Royal College of Physicians of London/Pitman Publishing Co., London, England, 1971, p. 9.
2. Smoking & Health, A report of the Surgeon General, U.S. Dept. of Health, Education & Welfare, Washington, D.C., U.S. Government Printing Office, 1979, p. ii.
3. Controlling the Smoking Epidemic, World Health Organization, Geneva, Switzerland, 1979, pp. 7-8.

made by cigarette manufacturers and . . . others . . . that the scientific evidence was sketchy; that no link between smoking and cancer was 'proven.' . . . Today there can be no doubt that smoking is truly slow-motion suicide."

This booklet *The Dangers of Smoking. The Benefits of Quitting and Reduced Exposure* adds, to the material covered in the original *The Dangers of Smoking, The Benefits of Quitting,* the latest findings in the 1979 Surgeon General's report, and other HEW reports published since 1972, plus those of the 1979 report, "Controlling the Smoking Epidemic," of the World Health Organization, and a number of recent individual studies.

Only the most pertinent investigations are cited and, in many cases, the findings of many are merged. Where a single study is described directly, the reference is given in a footnote; where several are abridged or described from another source, a general page reference is given to the survey publication in which the material appears.

See Bibliography at end of this booklet for sources of these general references marked [SG] [Diehl] [Royal] [WHO].

Following is the first chart to codify in simplified terms the dangers of smoking, the benefits of quitting, and the relative risks of smoking low tar/nicotine/filter-tipped cigarettes.

All tobacco-smoking damage seems to be dose related: to the age at which the smoker started, the number of cigarettes, pipes or cigars smoked per day, the length of time smoking has taken place, whether or not the smoker inhales, how deeply the smoker inhales, how much of the cigarette (or pipe or cigar) is smoked, the tar and nicotine content of the smoke. Thus, any diminution, or change, in any of the variable elements would affect the smoker's risk; and quitting entirely will reduce risks progressively over a period of time, providing irreversible tissue changes have not taken place.

The smoker who quits also achieves many *immediate* health benefits. The first is a rapid decline in the carbon monoxide level in the blood within twelve hours. Headaches and stomach-aches caused by smoking disappear. Stamina and vigor improve. Often ex-smokers notice a keener sense of taste and smell.

But there are many more important, long-term health and life-saving benefits from quitting cigarettes. See chart on the following two pages.

RISKS OF SMOKING	**BENEFITS OF QUITTING**	**RELATIVE RISKS: FILTER-TIPPED, LOW T/N BRANDS**
Risk: Shortened life expectancy. 25-year-old 2-pack a day smokers have life expectancy 8.3 years shorter than non-smoking contemporaries. Other smoking levels: proportional risk.	**Benefit: Reduces risk of premature death** cumulatively. After 10-15 years, ex-smokers' risk approaches that of those who've never smoked.	**Reduced risk of death** from certain diseases (see below) implies increased life expectancy.
Risk: Lung cancer. Smoking cigarettes "major cause in both men and women." [SG 1979]	**Benefit:** Gradual decrease in risk. **After 10-15 years, risk approaches that of those who never smoked.**	**Filter tips reduce risk,** but it is still 5 times that of non-smokers. Low T/N brands reduce male risk by 20%, female risk by 40%.
Risk: Larynx cancer. In all smokers (including pipe and cigar) it's 2.9 to 17.7 times that of nonsmokers.	**Benefit: Gradual reduction of risk** after smoking cessation. **Reaches normal after 10 years.**	**Filter tips reduce risk 24 to 40 percent.**
Risk: Mouth cancer. Cigarette smokers have 3 to 10 times as many oral cancers as non-smokers. Pipes, cigars, chewing tobacco also major risk factors. Alcohol seems synergistic carcinogen with smoking.	**Benefit:** Reducing or eliminating smoking/drinking reduces risk in first few years; **risk drops to level of nonsmokers in 10-15 years.**	No identified benefit
Risk: Cancer of esophagus. Cigarettes, pipes and cigars increase risk of dying of esophageal cancer about 2 to 9 times. Synergistic relationship between smoking and alcohol.	**Benefit:** Since risks are dose related, reducing or eliminating smoking/drinking **should have risk-reducing effect.**	No identified benefit
Risk: Cancer of bladder. Cigarette smokers have 7 to 10 times risk of bladder cancer as nonsmokers. Also synergistic with certain exposed occupations: dyestuffs, etc.	**Benefit: Risk decreases gradually to that of non-smokers over 7 years.**	No identified benefit
Risk: Cancer of pancreas. Cigarette smokers have 2 to 5 times risk of dying of pancreatic cancer as nonsmokers.	**Benefit:** Since there is evidence of dose-related risk, reducing or eliminating smoking should have risk-reducing effect.	No identified benefit.

RISKS OF SMOKING	BENEFITS OF QUITTING	RELATIVE RISKS: FILTER-TIPPED LOW T/N BRANDS
Risk: Coronary heart disease. Cigarette smoking is major factor; responsible for 120,000 excess U.S. deaths from coronary heart disease (CHD) each year.	**Benefit: Sharply decreases risk after one year.** After 10 years ex-smokers' risk is same as that of those who never smoked.	**Low T/N male smokers had 12 percent lower CHD rate,** female low T/N smokers 19 percent lower than high T/N smokers.
Risks: Chronic bronchitis and pulmonary emphysema. Cigarette smokers have 4-25 times risk of death from these diseases as nonsmokers. Damage seen in lungs of even young smokers.	**Benefit: Cough and sputum disappear** during first few weeks. **Lung function may improve** and rate of deterioration slow down.	No identified benefit
Risks: Stillbirth and low birthweight. Smoking mothers have more stillbirths and babies of low birthweight—more vulnerable to disease and death.	**Benefit:** Women who stop smoking before 4th month of pregnancy **eliminate risk of stillbirth and low birthweight** caused by smoking.	No identified benefit
Risks: Children of smoking mothers smaller, underdeveloped physically and socially, seven years after birth.	**Benefit:** Since children of nonsmoking mothers are bigger and more advanced socially, inference is that **not smoking during pregnancy might avoid such underdeveloped children.**	No identified benefit
Risk: Peptic ulcer. Cigarette smokers get more peptic ulcers and die more often of them; cure is more difficult in smokers.	**Benefit:** Ex-smokers get ulcers but these are **more likely to heal rapidly and completely** than those of smokers.	No identified benefit
Risk: Allergy and impairment of immune system.	**Benefit:** Since these are direct, immediate effects of smoking, they are obviously **avoidable by not smoking.**	No identified benefit
Risks: Alters pharmacologic effects of many medicines, diagnostic tests and greatly increases risk of thrombosis with oral contraceptives.	**Benefit: Majority of blood components elevated by smoking return to normal after cessation.** Nonsmokers on Pill have much lower risks of thrombosis.	

The most direct result of smoking is visible in the differences between the death rates of smokers and nonsmokers in the same age groups; and in the differences in the number of years of life between the two groups.

"Death rates are uniformly higher among smokers than among nonsmokers, in both sexes, and whatever the age at death. The excess mortality of cigarette smokers is proportionately greater at ages 45-54 than at younger or older ages. A smoker doubles his risk of dying before age 65." [WHO 1979, p. 9]

Death Rates

Among smokers, the death rates from all causes increase with the number of cigarettes smoked per day, the number of years the smoker has smoked, and the earlier the age at which smoking started. Other variables include depth of inhalation, tar and nicotine levels of the smoke, and the number of puffs per cigarette. All of these contribute to the degree of risk involved in smoking. [SG 1979, p. 2-20-25]*

In eight major prospective studies of about two million people, cigarette smoking is associated with a 61 percent average increase in overall death rates. In the two most vulnerable age groups, 35-44 and 45-54, the death rates of smokers are 86 percent higher and 152 percent higher, respectively. [SG 1979, p. 2-11]

The death rate for a given number of cigarettes smoked is higher among inhalers than among those who don't inhale. Ischemic heart disease, lung cancer, and chronic obstructive lung disease are not as likely to develop in individuals who do not inhale tobacco smoke.

Death Rates: Male

For groups of men smoking fewer than 10 cigarettes per day, of the types prevalent until the 1960's, the death rate is about 34 percent higher than for nonsmokers; between 10 and 19 cigarettes per day, it is 70 percent higher; between 20 and 39 cigarettes per day, the death rate is 96 percent higher, and for those who smoke

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*Note: The 1979 Surgeon General's Report is paginated by chapters, rather than consecutively. The chapter numbers are underlined to distinguish them from the page numbers.

40 cigarettes or more a day, the death rate is 123 percent higher than for nonsmokers. [Hammond, E. C., Horn, D., Smoking and Death Rates—Report on forty-four months of follow-up on 187,783 men. Part I, Total Mortality; JAMA 166: 1159-72, 1958] The death rate of smokers is substantially higher for men who started before age 20, than for those who started after age 25.

Low tar/nicotine cigarette smokers have lower mortality rates than medium or high tar/nicotine cigarette smokers; however, overall death rates of low tar and nicotine (less than 1.2 mg nicotine and less than 17.6 mg. tar) cigarette smokers are 52 percent higher than for nonsmokers.

Death Rates: Female

Women who smoke cigarettes have a significantly higher death rate than those who have never smoked regularly. As with men, the relationship between death and smoking is directly related to the number of cigarettes and the duration of the smoking habit.

The overall mortality rates are somewhat lower for women smokers than for male smokers of the same age. This reflects lower past exposure to cigarette smoke, such as starting smoking later, smoking cigarettes with lower tar and nicotine content, and smoking fewer cigarettes per day than men.

As women are beginning to smoke earlier and smoke more, however, their smoking-related illnesses are increasing.

Normal Death Rate and Excess Deaths

For each age group there is an expected death rate per 100,000 population for persons who have never smoked. The difference between the number of deaths of smokers, and the number of deaths expected—based on nonsmokers' death rates—are "excess deaths."

For men between the ages of 35 to 44 who smoked cigarettes, the excess number of deaths is 33 percent; for ages 45-54, more than 40 percent. In other words, if no one smoked, there would be at least 35 percent fewer male deaths between ages 35 and 54. [Hammond, E. C. Smoking in relation to the death rates of one million men and women. In Haenszel, W. (Editor). Epidemiological Approaches to the Study of Cancer and Other Chronic Disease. U.S. Public Health Service, National Cancer Institute

Monograph 19, 1966, pp. 127-204. Kahn, H. A. The Dorn study of smoking and mortality among U.S. veterans: report on 8½ years of observation. In Haenszel, W. op. cit., pp. 1-126]

Smoking-Related Deaths

"It has been calculated that in countries where smoking has been a widespread habit, it is responsible for 90 percent of lung cancer deaths, for 75 percent of bronchitis deaths, and for 25 percent of ischemic heart disease deaths under [illegible] years of age in men. In women the proportions may be somewhat less." [WHO 1979, p. 10]

Life Expectancy

A 25-year-old, two-pack-a-day smoker of cigarettes of the type prevalent until the 1960's has a life expectancy 8.3 years shorter than his nonsmoking counterpart. For groups of men smoking fewer than 10 cigarettes per day, the loss of years of life expectancy is 4.6 years; smoking 10 to 19 cigarettes a day shortens the life expectancy by 5.5 years; and smoking 20 to 39 cigarettes a day, by 6.2 years. [Hammond, E. C. Life Expectancy of American Men in Relation to Their Smoking Habits, J.N.C.I., 43: 951-962, 1969.] (See Table I p. 13).

Pipe and Cigar Smoking

Pipe and cigar smokers have mortality rates similar to those of cigarette smokers for cancers of the oral cavity, pharynx, larynx, and esophagus; but they have much lower death rates than cigarette smokers (but higher rates than nonsmokers) for cancer of the lung, ischemic heart disease, and chronic obstructive lung disease. The differences are thought to be related to differences in inhalation of smoke. Pipe and cigar smoke is chemically similar to cigarette smoke, except that the former is alkaline. Since alkaline smoke is irritating to the respiratory tract, it deters many pipe and cigar smokers from inhaling. When cigarette smokers switch to pipes or cigars, however, the tendency for some is to continue inhaling.

Disability

As in mortality, there is a normal or expected rate of disability. A National Health Survey by the U.S. Public Health Service calculated that in a single year cigarette smoking caused an additional or excess of:

Table I

SURVIVORSHIP OF MEN AGED 25 IN RELATION TO CURRENT NUMBER OF CIGARETTES SMOKED PER DAY: BASED ON RATES ADJUSTED TO THE 1959-61 U.S. LIFE TABLE FOR ALL MALES

Age (yr.)	All men (%)	Never smoked regularly (%)	Smokers: No. of cigarettes daily 1-9 (%)	10-19 (%)	20-39 (%)	40- (%)
25	100.0	100.0	100.0	100.0	100.0	100.0
30	99.1	99.4	99.1	99.1	99.1	98.8
35	98.2	98.7	98.1	98.1	98.0	97.3
40	96.8	97.8	96.6	96.5	96.5	95.1
45	94.6	96.4	94.2	94.0	93.8	91.0
50	91.1	94.4	90.6	90.0	89.3	85.6
55	85.6	90.9	85.9	83.8	82.5	77.7
60	78.1	85.5	77.8	75.3	73.5	67.1
65	67.8	77.7	67.3	63.4	61.1	54.0
70	55.2	66.7	52.4	47.7	45.9	40.0
75	41.2	52.3	36.2	33.3	30.3	25.7
80	26.7	35.6	20.6	18.6	18.1	14.3
85	13.6	19.2	7.3	8.5	7.2	6.5
90	4.9	7.0	2.2	2.2	2.2	2.1
95	1.0	1.5	0.5	0.5	0.5	0.4
Life expectancy (age)	70.2	73.6	69.0	68.1	67.4	65.3
Life expectancy (yr.)	45.2	48.6	44.0	43.1	42.4	40.3
Difference from N.S.R. (yr.)	3.4	0	4.6	5.5	6.2	8.3

SOURCE: Hammond, E.C., Rogot, E. (SG 1979, p. 2-12)

. . . 81 million person-days lost from work.

. . . 145 million person-days spent ill in bed. [SG 1979, pp. 1-13]

For men between ages 45 and 64, more than 25 percent of the number of days of disability were associated with cigarette smoking.

Another study among women, housewives and those with paid jobs, showed that those who smoked cigarettes spent 17 percent more days ill in bed than women who have never smoked. [Smoking and Illness, National Clearinghouse for Smoking and Health, Public Health Service, May 1967]

Chronic Illness

Taking the rate of chronic illness of people who had never smoked cigarettes as the baseline, in 1967 the National Clearinghouse for Smoking and Health estimated that:

"There are 11 million more chronic cases of illness yearly in this country than there would be" (if no one smoked).

The same estimate reported that:

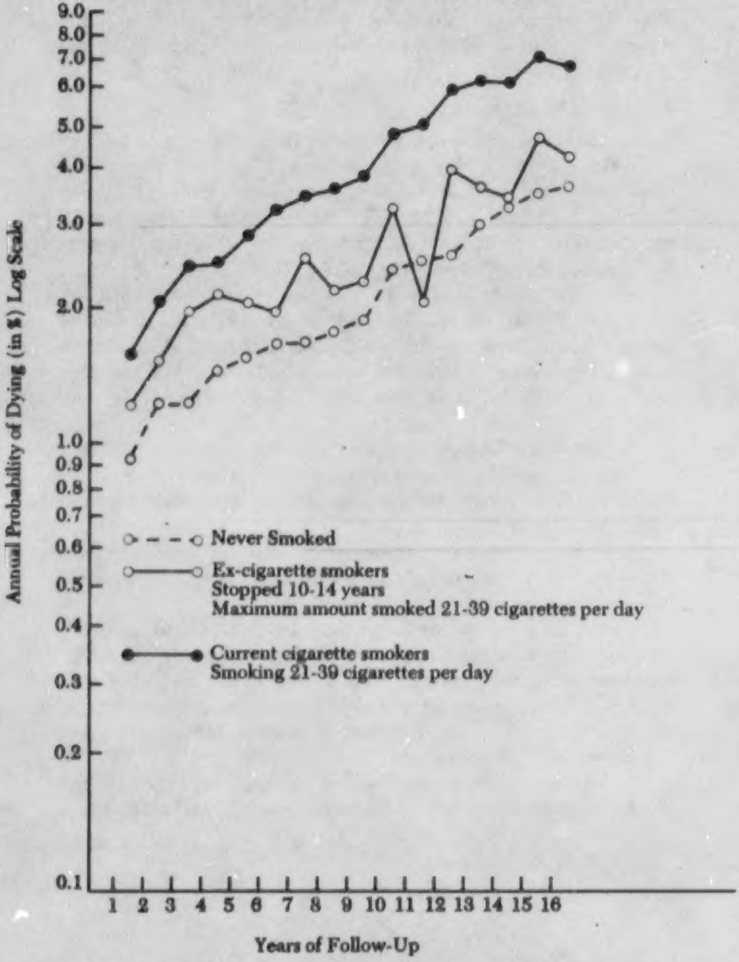
"There are 280,000 more persons who report a heart condition" and estimated one million more cases of chronic bronchitis and/or emphysema; 1.8 million more cases of sinusitis; one million more cases of peptic ulcer than there would be if no one ever smoked cigarettes. [Ibid]

Quitting Reduces Risk

There is ample evidence that giving up cigarettes reduces the excess risk of mortality. The benefit is cumulative, over a period of years. After ten to 15 years of smoking cessation, the ex-smokers' risk of dying prematurely is reduced close to that of persons who have never smoked, as in the following chart (Figure 1):

Figure 1

ANNUAL PROBABILITY OF DYING FOR EX-SMOKERS WHO QUIT 10-14 YEARS, CURRENT CIGARETTE SMOKERS AND NONSMOKERS, AGES 55 TO 64, U.S. VETERANS 1954 COHORT, 16-YEAR FOLLOW-UP.



SOURCE: Roget, E., Smoking and Mortality Among U.S. Veterans Inc. Chronic Diseases 27: (89-203/1974).

Smoking cigarettes has been identified by official commissions and scientific studies in many countries (Australia, Canada, Denmark, Finland, France, Holland, New Zealand, Sweden, United Kingdom, the United States) as the cause of the enormous rise in the incidence of lung cancer in those countries since World War II, a rise so steep that it has been called an epidemic. Lung cancer is fatal in about 92 percent of male cases, and in 88 percent of female cases.

Increase in Mortality

In 1914, the death rate from lung cancer was 0.7 per 100,000 population in the United States and Great Britain for both men and women. By 1950, the lung cancer death rate for U.S. men had risen to 18.4 per 100,000/year. In 1964, it had mounted to 37.6 and in 1977, to 54.8. Comparable figures for white females were 4.0 in 1950, 5.9 in 1964 and 14.9 in 1970.

In 1950, there were 18,313 U.S. lung cancer deaths; in 1964, there were 45,838 lung cancer deaths and in 1977, 90,510 died of these tumors. For 1980, the prediction is 101,000 such deaths. Some of this increase is due to an aging population. [Vital Statistics of the United States 1950, 1964, 1977. U.S. Government Printing Office.]

However, the U.S. Surgeon General reported in 1971 that "... cigarette smoking is the main cause of lung cancer in men ... in women (it) accounts for a smaller portion of the cases than in men." [SC 1971, p. 11]

In the 1979 Surgeon General's Report, this conclusion was strengthened: "Cigarette smoking is the major cause of lung cancer in both men and women." [SC 1979, p. 5-31]

An increased risk of lung cancer has been found for every smoking habit investigated. There are dose-response relationships for developing lung cancer. That is, the number of cigarettes smoked per day, the duration of smoking, degree of inhalation, tar and nicotine content of cigarettes, all contributed an increased risk of developing lung cancer.

The age at which people start smoking is also related to the ill effects; men who started smoking before age 15 had a death rate from lung cancer nearly four times higher than those who began after age 25.

Pipe and cigar smokers have higher lung cancer mortality rates than nonsmokers, but considerably lower rates than cigarette smokers. [SG 1979, p. 5-23]

Safety in Stopping

The risk of developing lung cancer increases with age, for both smokers and nonsmokers; however, the incidence of lung cancer in cigarette smokers is much higher.

A comforting corollary for those who are able to stop smoking cigarettes: "There is a decrease in risk of developing lung cancer, which occurs over a period of several years." After 10 to 15 years, the risk of dying of lung cancer for ex-smokers has decreased to the point where it is only slightly above the risk for nonsmokers of the same age. All of the major studies show this reduction in risk.

Figure 2 on p. 18 shows the different incidences of bronchial carcinoma in smokers and ex-smokers, according to years stopped, and nonsmokers.

Male/Female Differences in Lung Cancer

The difference in lung cancer incidence and mortality between male and female smokers has often been cited by critics as casting doubt on the connection between cigarette smoking and lung cancer. However, it usually takes 15-20 years of smoking to produce lung cancer in a human being, and heavy smoking among women is concentrated in the age groups in which lung cancer is least prevalent. Difference in hormonal makeup may also play a part in the difference in the lung cancer rates between male and female smokers.

Women generally smoke less of each cigarette than men, thus avoiding the heavy concentration of nicotine and tar in the last part of the cigarette. On the average, women also inhale less frequently and less deeply than men, and smoke filter-tipped cigarettes with lower tar and nicotine.

Rapid Increase of Female Lung Cancer

However, lung cancer mortality is increasing in women more rapidly than any other cause of death. The lung cancer death rate in women has risen nearly 1,000 percent since 1930. The U.S.

Figure 2

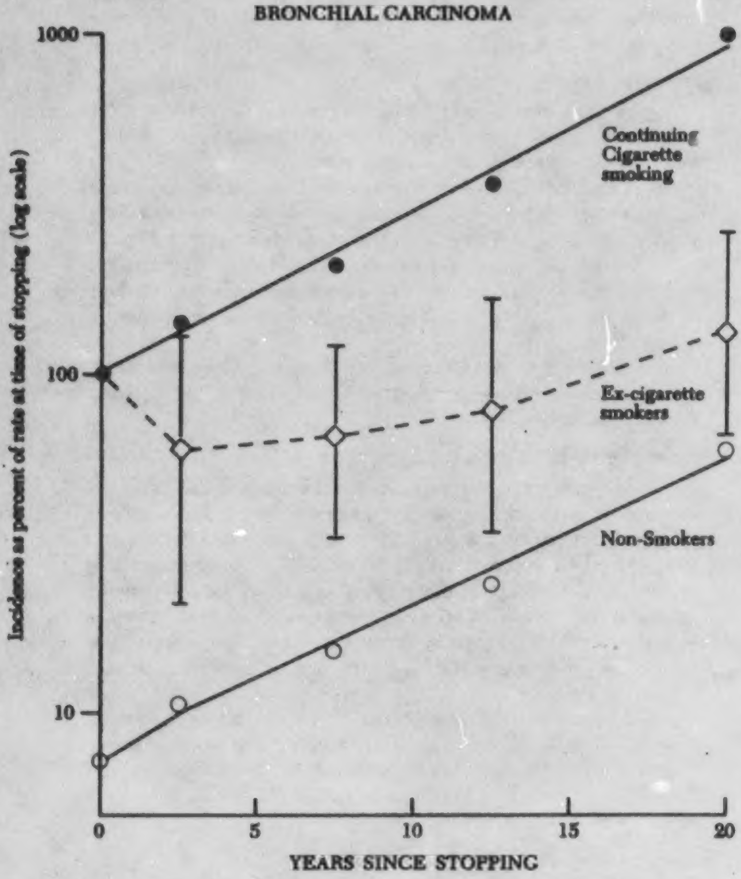


Fig. 2 Relationship between the incidence of bronchial carcinoma and time since cigarette smoking was stopped, compared with the relationship in continuing smokers and nonsmokers.

Source: Doll, R., Practical steps towards the prevention of bronchial carcinoma. Scot. Med. Jnl. 15:438-447, 1970.

lung cancer death rate is rising faster today among women than among men, as more and more women smokers move into the age groups in which lung cancer becomes prevalent. [Royal, pp. 59-60, SG 1971, pp. 251-252]

In 1964, lung cancer was the fifth leading cause of death from cancer in U.S. women. It rose to fourth place in 1967 and to third place in 1969, passing cancer of the uterus. In 1977, lung cancer mortality passed that of cancer of the colon and rectum as the second leading cause of death from cancer in U.S. women. If present trends are not reversed, during the next decade lung cancer will become the leading cause of cancer mortality in U.S. women, exceeding deaths from cancer of the breast.

Sex Differences in Smoking

An English doctor calculated in 1964 that the lifetime consumption of cigarettes among 47-year-old men was four times as great as among 47-year-old women, and that the male lung cancer death rate between ages 45 and 49 was five times as great as among women. [Royal, p. 60.] The British note that smoking has been increasing more rapidly among British women than among British men. [Royal p. 59.]

Today, although there are still fewer U.S. women smoking than U.S. men, the gap is rapidly narrowing. Cigarette smoking among U.S. teenage girls has been increasing steadily, so that as of 1974, equal percentages of boys and girls are smoking cigarettes. But there have been recent declines as shown in Table II on the following page.

Over the past decade, there has been a 2.6 percent decrease in the number of adult U.S. females who smoke cigarettes, whereas there has been a 13.6 percent reduction in the number of adult U.S. males smoking cigarettes.

Filter Tips

The public began to become aware of the connection between cigarettes and lung cancer and other diseases in the early 1950's with the publication of the earliest prospective smoking and health studies. This growing awareness has had a strong impact on the smoking habits of people all over the world. In the years in which key studies and reports were issued, there were drops in the overall consumption of cigarettes. And smokers have switched in

Table II

PERCENT OF TEENAGERS WHO ARE CURRENT CIGARETTE SMOKERS FOR SELECTED YEARS IN THE UNITED STATES

	Percent smokers ages 12-18	
Year	Girls	Boys
1968	8.4	14.7
1970	11.9	18.5
1972	13.3	15.7
1974	15.3	15.8

Source: National Clearinghouse for Smoking and Health. Patterns and Prevalence of Teen-age Cigarette Smoking: 1968, 1970, 1972, and 1974. U.S. Department of Health, Education, and Welfare, Public Health Service, Center for Disease Control, DHEW Publication No. (HSM) 74-8701, July 1974. 4 pp.

massive numbers to filter-tipped cigarettes on the assumption that removing some of the particulate matter (tar) and gases from smoke ought to lower the risk. Today, more than 90.3 percent of cigarettes sold in the United States are filter-tipped; 25 years ago, filter tips represented less than three percent of the market. Manufacturers have steadily changed the types of tobacco in cigarettes and as a result have decreased the amount of tar and nicotine in all brands. Thus, today many brands without filters give off less tar and nicotine than some filter-tipped brands did a dozen years ago. (See p. 22)

Filters: Long-Term Benefit

The long-term use (10 years or more) of filter cigarettes is associated with lower death rates from lung cancer than that associated with an equal number of nonfilter cigarettes. This conclusion comes from a number of studies.

In a study of 552 patients with lung cancer matched with 522 controls, Wynder et al, found that those who had switched to filters 10 years earlier had a lower risk of lung cancer than those continuing to smoke the same number of nonfilter cigarettes. [SG 1971, p. 275.]

Tar and Nicotine

In a recent large prospective study, 897,825 men and women smokers in 23 states were divided into three categories according to tar and nicotine levels*, and examined with respect to lung cancer. The results are shown in Table III, page 22.

Relative Risks of Low Tar

For males smoking the same number of cigarettes per day, there appears to be a 19 percent reduction in risk of developing lung cancer with the use of low T/N cigarettes. For females, there is a 40 percent reduction in risk. However, in a separate matched-group analysis, the number of cigarettes smoked per day was found to be relatively more important than the tar and nicotine content of cigarettes.

In the last 25 years, there has been a great drop in the tar and nicotine content of the smoke from cigarettes consumed in the

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*High tar and nicotine (T/N): 25.8 to 35.7 mg. tar; 2.0 to 2.7 mg. nicotine. Medium T/N: 17.6 to 25.7 mg. tar; 1.2 to 1.9 mg. nicotine. Low T/N: less than 17.6 mg. tar and less than 1.2 mg. nicotine.

Table III

AGE-ADJUSTED LUNG CANCER MORTALITY RATIOS* FOR MALES AND FEMALES BY TAR AND NICOTINE IN CIGARETTES SMOKED

	Males	Females
High T/N	1.00	1.00
Medium T/N	0.95	0.79
Low T/N	0.81	0.60

*The mortality ratio for the category with highest risk was made 1.00 so that the relative reductions in risk with the use of lower T/N cigarettes could be visualized.

Source: Hammond, E.C., Garfinkel, L., Seidman, H., Lew, E.A. Some recent findings concerning cigarette smoking. In: Hiatt, H.H., Watson, J.D., Winsten, J.A. (Editors). Origins of Human Cancer. Book A: Incidence of Cancer in Humans. New York, Cold Spring Harbor Laboratory, 1977, pp. 101-112.

United States. A recent autopsy study asked: are there differences in lung damage in smokers who died (of diseases other than lung cancer) in the period 1955-1960 (Group A) as compared with those who died in the period 1970-1977 (Group B)?

In fact, structural changes of various sorts—cells with atypical nuclei (having the appearance of cancer cell nuclei), lesions with no cilia and basal cell hyperplasia—were found far more frequently in the bronchial epithelium (lining) of Group A smokers than in Group B. [See Figure 3, p. 24] This encouraging sign has prompted the authors of this autopsy study to predict that at some future date, there should be a decline in the death rates of cigarette smokers from lung cancer. [Auerbach, O., Hammond, E. C., Garfinkel, L. Changes in Bronchial Epithelium in Relation to Cigarette Smoking, 1955-1960 vs. 1970-1977. The New England Journal of Medicine 300 (8): 381-386, 1979.]

Dangerous Occupations

Lung cancer is caused not only by cigarettes but is also associated with exposure to certain minerals and chemicals, and, in a very small degree, with polluted air. However, although the risk of lung cancer is four times as great, among (say) cigarette smoking uranium miners as in the general cigarette smoking population, it is 10 times greater among uranium miners who smoke than among nonsmoking uranium miners. In a 17-year follow-up study of 3,414 uranium miners, there were 62 lung cancer deaths—but only two of these were of nonsmokers. [SG, 1971, p. 256.]

Cigarette smoking and occupational exposures are said to be synergistic, acting together in a complicated way. Most hazardous occupational exposures involve single substances or only a few. Cigarette smoking, however, results in exposure to more than 2,000 chemical compounds, among which are carcinogens, tumor initiators and promoters. [SG 1979, p. 5-27.] Thus, the number and type of interactions can be very large.

Asbestos workers have eight times the lung cancer risk of the general population. But among asbestos workers who smoke cigarettes this risk has been estimated to be 92 times the risk of nonsmokers who do not work with asbestos. [Selikoff, I. J., Bader, R. A., Bader, M. E., Churg, J., Hammond, E. C. Asbestosis and neoplasia. The American Journal of Medicine 42 (4): 487-496,

Figure 3

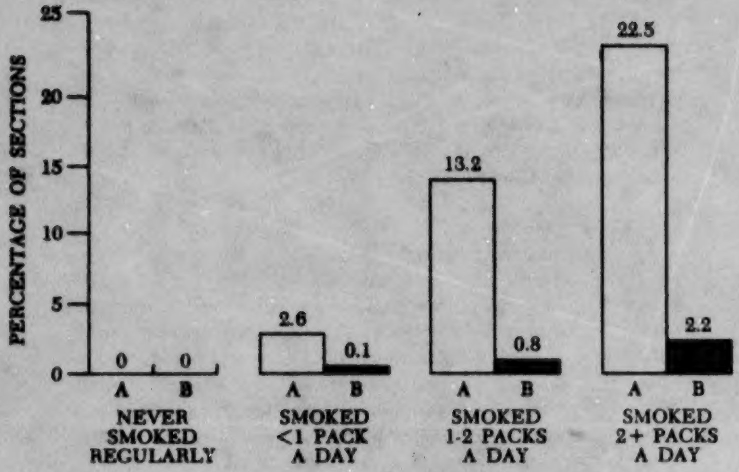

Figure 3: Percentage of Sections with Advanced Lesions (Cilia Absent and All Nuclei Atypical) According to Smoking Habit in Group A (1955-1960 Deaths) and Group B (1970-1977 Deaths).

Source: Auerbach, O. etalon eng Jul. 300(8):381-386, 1979. Ibid.

April 1967. Selikoff, I. J., Hammond, E. C., Churg, J. Asbestos exposure, smoking, and neoplasia. Journal of the American Medical Association 204 (2): 104-110, April 8, 1968.]

There is also an increased risk of lung cancer reported among people who work with arsenic, chromium, nickel, coal, natural gas and graphite—but in all cases, the risk is much greater for cigarette smokers than for nonsmokers in the same occupations. [SG 1971, pp. 256-258.]

General Air Pollution

Many people have noted that the rise in lung cancer coincides with the great increase in industrial and urban air pollution, and have theorized that this is the real cause of lung cancer. Studies, so far, do not bear this out.

The conclusion, based on more than 13 different epidemiologic investigations, is that in the absence of cigarette smoking, the combined effects of all atmospheric agents do not increase the death rates for lung cancer more than a very few cases per 100,000 persons per year. [SG 1979, p. 5-27.]

Two 1967 studies were made of people living in Los Angeles, where air pollution is the worst in California, matching smokers and nonsmokers in relation to the time they had lived there and in other California cities. It showed that the general risk of lung cancer was no greater in Los Angeles than in any other California city. However, it may be too early to conclude that air pollution is not a significant factor in lung cancer, since the disease takes many years to develop and air pollution became a problem in Los Angeles only between 1945 and 1950. [SG, 1968, p. 98]

Smoking Dogs

One of the criticisms leveled at the cigarette-and-health linkage was that lung cancer had not been produced in large animals by cigarette smoke. In 1970, this gap was filled by the results of a long-term study of dogs who smoked cigarettes through a special device. Ninety-seven healthy beagles were used in the experiment. The dogs were divided into groups smoking numbers of cigarettes equivalent to one to two packs a day by a 150 lb. man, with one nonsmoking control group. All smoking dogs showed cancerous or other pathological changes in the lungs after 875 days of smoking.

A number of dogs died during the experiment, but none was a nonsmoker. At the end of the experiment 40 dogs were sacrificed. A number of tumors were found in the lungs of the animals. Two of eight nonsmoking dogs (25%) had tumors; four of 10 dogs (40%) who smoked filter-tipped cigarettes had tumors; five of 10 (50%) of a group of nonfilter smokers (who smoked only half as many cigarettes), and 12 of 12 (100%) of the full-quota nonfilter group, had tumors. One interesting fact: the only invasive tumors were found in full-quota nonfilter smokers, and two of these were carcinomas similar to the type most often seen in men.

Dogs' lungs were also analyzed for emphysema, and tissue and cellular changes. By far the largest number of pathologies were found in the dogs who had smoked the full quota of nonfilter cigarettes, considerably fewer in those who smoked only half as many nonfilters, very few such changes in filter-tip smokers and none in the nonsmoking dogs.

Comparing the results with those of studies of the lungs of men the authors conclude: ". . . the types of histologic changes produced in the lung parenchyma (main lung tissue) were found to be the same in the beagle as in man; in both species there is a dose relationship; in both . . . the degree of damage . . . increases with increasing duration of cigarette smoking . . ." Extrapolating the beagle study to man, the authors state: "*Findings in this study strongly suggest that smoking cigarettes with an efficient filter will produce less damage to the human lung parenchyma than smoking identical cigarettes without filters*" (authors' italics). [Hammond, E. C., Auerbach, O., Kirman, D., Garfinkel, L. Effects of Cigarette Smoking on Dogs, Archives of Environmental Health, December, 1970, p. 752.]

Pro-Smoking Criticisms

Defenders of cigarette smoking raise three other objections to the cause-and-effect relationship between cigarettes and lung cancer:

Objection 1. The evidence is only statistical.

Answer: This is not true. Hundreds of epidemiological, experimental, pathological, and clinical studies all demonstrate that cigarette smoking is hazardous.

Health statistics are the basis of most disease control. And all biomedical research, whether in experimental animals or human populations, must use statistical techniques to analyze and reach sound, scientific conclusions.

The Royal College of Physicians points out: "... it is possible to observe what is, in effect, an experiment in which millions of people who have been smoking cigarettes often develop lung cancer while millions of others who have abstained seldom do so." [Royal, p. 61]

Objection 2. The association is nonspecific in that many different diseases are associated with cigarette smoking.

Answer: The great fog of London in 1952 increased the death rate for many diseases, particularly respiratory and coronary disease. Cigarette smoke, like the London fog, is not a single chemical, but thousands of chemicals, many of them known to be harmful. It is unreasonable to suppose that exposure to this range of chemicals would increase the risk of only one disease.

Objection 3. The genetic theory: people inherit a tendency toward lung cancer and a desire to smoke cigarettes.

Answer: While there are some psychological and physiological differences between smokers and nonsmokers, there is no evidence of an inherited tendency toward lung cancer. When many British doctors stopped smoking, the lung cancer death rate for that profession went down—which contradicts the premise of an inborn desire to smoke, and an inborn tendency to lung cancer.

Other easily disprovable criticisms are:

That the rise in lung cancer is fictitious, caused by better diagnosis; *disproved* by the fact that the rise has been greater in men than in women, both being diagnosed the same way. [Royal, p. 63.]

That the rise in lung cancer may have resulted from a fall in the TB death rate; *disproved* by the fact that while the fall in TB mortality has been greater in women, the rise in lung cancer has been greater in men.

Some Conclusions

1. "Cigarette smoking is the major cause of lung cancer in both men and women. This fact has been supported by prospective and retrospective epidemiological studies, clinical studies, autopsy studies, and experimental studies in animals. The conclusion is based on evidence which exceeds by several times the evidence available when this same conclusion was first reached in 1964.

3. "Lung cancer mortality is increasing in women more rapidly than any other cause of death. If present trends continue, lung cancer will be the leading cause of cancer death among women in the next decade.

5. "The long-term use (10 years or more) of filter cigarettes is associated with lower death rates from lung cancer than those of persons who smoke an equal number of nonfilter cigarettes.

6. ". . . The risk of developing lung cancer for ex-smokers depends on the type of smoker he or she used to be (and is proportional) to the number of cigarettes previously smoked per day, degree of inhalation, the age when smoking was started, and duration of smoking . . . It takes from 10 to 15 years, however, until the risk of developing lung cancer [of ex-smokers] approaches that of nonsmokers." [SG 1979, p. 5-31.]

III—OTHER CANCERS

Tobacco smoking also causes, or is strongly associated with, cancers of the larynx, mouth, esophagus, urinary bladder, pancreas and possibly kidney.

Cancer of the Larynx

A typical patient with cancer of the larynx is a 60-year-old male who has been a heavy cigarette smoker and also a moderate-to-heavy alcohol drinker. [Marks, R. D., Putney, I. J., Scruggs, H. J., Adkins, W. Y., Wallace, K.·M. Management of Cancer of the Larynx. Journal of the South Carolina Medical Association 71 (11): 333-336, 1975]

The relative risk for developing laryngeal cancer is 15.8 for male cigarette smokers and 9.0 for female cigarette smokers. This large sex difference is now diminishing, probably because of the increase in female cigarette smokers. [SG 1979, p. 5-33]

Pipe and cigar smokers have a risk similar to that of cigarette smokers of developing laryngeal cancer. [SG 1979, p. 5-36]

The number of cigarettes smoked per day is strongly related to the risk of developing cancer of the larynx. In one study relative risks for males ranged from 2.9 for short-term light smokers, to 17.7 for heavy, long-term smokers. [Williams, R. R., Horn, J. W., Association of cancer sites with tobacco and alcohol consumption and socioeconomic status of patients: Interview study from the Third National Cancer Survey. Journal of the National Cancer Institute 58 (3): 525-547, March 1977]

Autopsy studies reveal a clear dose relationship between the number of cigarettes smoked and atypical cellular changes in the larynxes of men who did not die of larynx cancer. Every smoker of a pack-or-more-a-day studied had atypical cellular changes—the more cigarettes smoked, the more such cell changes. But 75 percent of the nonsmokers had no abnormal cells; and those who did, had very few. Of the men who had quit smoking, 40 percent had abnormal cells which were disintegrating—that is, disappearing, and being replaced by normal cells. [Auerbach, O., Hammond, E. C., Garfinkel, L., Histologic Changes in the Larynx in Relation to Smoking Habits, Cancer 25: pp. 92-104, January 1970]

A distinct syngergism between alcohol and tobacco in laryngeal cancer has been confirmed, verifying the link noted in over 14 earlier studies. [Wynder, E. L., Covey, L. S., Mabuchi, L., Mushinski, M. Environmental factors in cancer of the larynx. A second look. Cancer 38 (4): 1591-1601, October 1976]

Long-term cigarette smokers, both males and females, who use filter-tips, reduce their risk of laryngeal cancer by from 24 to 49 percent, and the risk among ex-smokers drops gradually after cessation. After approximately ten years, ex-smokers' risk of larynx cancer approaches that of nonsmokers. [SG 1979, 5-34]

Cancer of the larynx is often cured, usually by surgery and generally by removal of the larynx, the main organ of speech. The patient thus cured can be taught a new method of speech, and must live with a permanent opening in his throat. A new experimental operation can sometimes create a new "vocal cord" out of pharyngeal tissue that makes re-learning speech quicker and easier.

Surgeon General's Conclusion

"... Epidemiological, experimental and autopsy studies indicate that cigarette smoking is a significant causative factor in the development of cancer of the larynx. The risk of developing laryngeal cancer in pipe and cigar smokers is similar to that for cigarette smokers, [and] much greater for heavy smokers who also drink heavily, compared with individuals who only have exposure to either substance. There is a substantial decrease in risk ... with the long-term use of filter cigarettes (10 years or more) compared to the use of nonfilter cigarettes, [and] a gradual reduction in risk of ... laryngeal cancer after cessation of smoking." [SG 1979, pp.5-37, 38]

Mouth Cancer

Analysis of a large number of studies reveals from three to ten times as many mouth cancers (cancers of the lip, tongue, floor of the mouth, hard and soft palate, etc.) in cigarette smokers as in nonsmokers. Pipe smoking has long been recognized as a cause of lip cancer; pipe and cigar smoking as well as tobacco chewing, also contribute to cancer at other sites in the mouth.

Alcohol consumption and possibly poor dentition also appear to be risk factors. In one study, 76 percent of oral cancer in males was attributed to the interaction of tobacco and alcohol. The risk for the heavy drinker who also smokes is from six to 15 times greater than for the individual who does not use tobacco or alcohol. [Rothman, K., Keller, A. The effect of joint exposure to alcohol and tobacco on risk of cancer of the mouth and pharynx. Journal of Chronic Disease 25: 711-716, 1972.]

Mouth cancers are often cured because they are readily seen and treated at an early stage. Of one series of 117 patients cured of mouth cancers, 43 quit smoking but 74 continued to smoke. All remained free of symptoms for three years. Then 24 of the 74 smokers developed new cancers of the mouth; but only four of the 43 who had quit smoking developed cancer a second time. Thus, the repeat rate of mouth cancer was four times as great among smokers as among those who stopped smoking. [Moore, C., Multiple Mouth-Throat Cancer, American Journal of Surgery, pp. 534-536, October 1965]

Surgeon General's Conclusion

"... Smoking is a significant causal factor in the development of cancer of the oral cavity ... the use of pipes, cigars and chewing tobacco is associated with cancer of the oral cavity. The risk of using these forms is the same general magnitude as that of using cigarettes ... The use of alcohol and tobacco together results in a higher risk of developing cancer than ... from the use of either substance alone." [SG 1979, p. 5-42]

Cancer of the Esophagus

Cigarette smokers have a risk of dying of esophageal cancer about two to nine times that of nonsmokers, depending on the number of cigarettes smoked and on the amount of alcohol drunk. The known cancer-causing chemicals in cigarette smoke dissolve in alcohol; and in this form they more readily penetrate tissues. Thus, when swallowed, they are apt to enter the walls of the esophagus. This has been demonstrated experimentally in animals. [SG 1979, p. 5-44, 45]

A study of the esophagi of 1,268 men who died of causes other than esophageal cancer showed that abnormal cells—precancerous cells—were found much more frequently in the tissues of smokers than in nonsmokers. [Auerbach, O., Stout, A. P., Hammond, E. C., Garfinkel, L., Histologic Changes in Esophagus in Relation to Smoking Habits, Archives of Environmental Health 11

(1): 4-15, July, 1965.]

Surgeon General's Conclusion

"... Cigarette smoking is a significant causal factor in the development of cancer of the esophagus. The risk ... [in] pipe and cigar smoking is about the same ... as that for cigarette smokers ... studies also indicate a synergistic relationship between the use of alcohol and tobacco and ... cancer of the esophagus. [SG 1979, pp. 5-44, 45]

Cancer of the Urinary Bladder and Kidney

A number of studies have shown a higher incidence of cancer of the urinary bladder among smokers, and a higher death rate from this disease among smokers than among nonsmokers. The increased risk—as compared with nonsmokers—of contracting bladder cancer ranges up to more than seven times among all smokers, and is ten times as great in heavy smokers.

About 40 percent of male bladder cancers and 31 percent of female bladder cancers may be attributed to smoking cigarettes.

In ex-smokers, the risk of developing bladder cancer decreases and approaches that of nonsmokers about seven years after quitting smoking. [Wynder, E. L., Goldsmith, R. The epidemiology of bladder cancer. A second look. Cancer 40: 1246-1268, 1977]

Smokers also have a higher risk of kidney cancer, ranging from about one and one-half to two and one-half times normal.

Certain occupational exposures to dyestuffs, rubber, leather, printing inks, paint, petroleum, and other chemicals increase the risk of developing bladder cancer. A number of substances, in the chemical family of aromatic amines, have been identified as risk factors in human bladder cancer and are also found in cigarette smoke. Thus, cigarette smoking alone, or in concert with occupational exposures can act as agents in the development of bladder cancer. [SG 1979, p. 5-47]

Surgeon General's Conclusion

"Epidemiological studies demonstrate a significant association between cigarette smoking and cancer of the urinary bladder in both men and women ... Cigarette smoking acts independently as a cause of bladder cancer and probably acts synergistically with other risk factors such as occupational exposure to certain aromatic amines." . . . Studies have demonstrated an association of cigarettes with cancer of the kidney among men." [SG 1979, p. 5-49]

Cancer of the Pancreas

The incidence of cancer of the pancreas has increased threefold in the United States since 1930 and now ranks fourth in frequency among fatal neoplastic diseases. [Seidman, H., Silverberg, E., Holleb, A.I., Cancer Statistics, 1976. A comparison of white and black populations. CA 26: 2-29, 1976]

Pancreatic cancer is more common among U.S. men than women but the male-to-female ratio is decreasing steadily. Mortality rates for smokers from this disease are twice that of nonsmokers, and five times that for males smoking more than two packs of cigarettes a day.

Surgeon General's Conclusion

". . . Data from prospective and retrospective investigations have demonstrated a significant association between cigarette smoking and cancer of the pancreas . . . The relative risk . . . is about five times greater for a two-pack-a-day smoker than for a nonsmoker." [SG 1979, p. 5-53]

IV–HEART ATTACKS, CIRCULATORY DISEASES AND STROKE

Cigarette smoking causes a higher death rate from coronary heart disease in the United States. It has been estimated that more than 120,000 excess deaths from this disease each year in this country are caused by cigarette smoking. [Am. Heart Association Report of Ad Hoc Committee on Cigarette Smoking and Cardiovascular Disease, Am. Heart Association Document 11/10/77]

Studies of more than two million individuals show that cigarette smoking increases the risk of sudden cardiac deaths, and atherosclerosis (lesions, plaques and occlusions of arteries, heart and other organs). However, the association between cigarette smoking and strokes, and angina pectoris (chest pain) is not conclusive; and there is no apparent relationship between smoking and the incidence of hypertension (high blood pressure). Nevertheless, hypertension and cigarette smoking, when present together, multiply risk. (see below)

Quitting Sharply Reduces Risk

Stopping smoking sharply decreases the risk of heart attacks, and other circulatory diseases. This begins to happen within one year after stopping and after 10 years, the ex-smoker's risk is almost the same as that of the person who has never smoked. [Hammond, E. C. Garfinkel, L., Coronary Heart Disease, Stroke and Aortic Aneurysm. Factors in the Etiology, Archives of Environmental Health 19 (2): 168-182, August 1969]

In a study of all British doctors, age 35-64, since 1951, many of these physicians have given up cigarette smoking. But fewer British men in general have stopped smoking cigarettes. In 1968 deaths from all heart and blood vessel diseases among these British doctors had dropped by six percent since 1953; while the deaths from these diseases in all British men had increased by nine percent. [Royal, p. 88]

The most recent U.S. information on smoking cessation in the following table shows significant decreases in the probability of death from coronary heart disease for those who have stopped smoking for five or more years. (See Table IV, p. 35).

Risk Factors

Several major "risk factors" have been identified in heart

Table IV

ANNUAL PROBABILITY OF DEATH FROM CORONARY HEART DISEASE, IN CURRENT AND DISCONTINUED SMOKERS, BY AGE, MAXIMUM AMOUNT SMOKED, AND AGE STARTED SMOKING

		Age started smoking			
		15-19		20-24	
Age	Maximum daily number of cigarettes smoked	Current smokers	Discontinued for five or more years	Current smokers	Discontinued for five or more years
		(Probability x 10^5)			
55-64	0	501	–	501	–
	10-30	798	566	811	551
	21-39	969	766	872	698
65-74	0	1,015	–	1,015	–
	10-20	1,501	1,169	1,478	1,213
	21-39	1,710	1,334	1,573	1,098

[1] For age group 65-74, probabilities for discontinued smokers are for 10 or more years of discontinuance since data for the 5-9 year discontinuance group are not given.

SOURCE: *U.S. Public Health Service. The Health Consequences of Smoking. A Reference Edition: 1976. U.S. Department of Health, Education, and Welfare, Public Health Service, Center for Disease Control, HEW Publication No. (CDC) 78-8357, 1976, 657 pp.*

attacks. The three leading risk factors are 1) cigarette smoking; 2) high blood pressure (hypertension); and 3) high blood cholesterol.

Each of these risk factors increases a person's chances of having a heart attack. People who smoke cigarettes, but have neither of the other two factors, have a death rate from heart attack 60 percent greater than that of nonsmokers. If all three risk factors are present, the risk goes up to 300 percent that of persons without any risk factors. Risk is also related to age and the amount of exposure.

Artery Disease

Studying the arteries of cigarette smokers at autopsy, pathologists have seen that the blood vessels of smokers contain a great number of fatty plaques, which adhere to the walls and clog circulation. This condition is known as atherosclerosis, a form of arteriosclerosis, and is thought to predispose the sufferer to heart attacks.

In a study of this type, the arterioles (small arteries) and arteries of nearly 2,000 men who died of all causes were examined. Blood vessels were removed from various parts of the body: the trachea (windpipe), bronchial tubes, esophagus, stomach, pancreas and adrenal glands. The scientists did not know the smoking habits of the men until after they examined these tissues and recorded their findings. It was found that the walls of the blood vessels in all these organs tended to thicken with age in all subjects. But thickening was considerably greater in smokers than in nonsmokers, and was directly related to the number of cigarettes smoked. "Regardless of the mechanism, it seems likely that the thickening of the walls of arterioles and small arteries located in an organ has at least a slightly deleterious effect upon that organ," the authors concluded. "If widespread, it may put some strain upon the cardiovascular system as a whole. If so, this may have some bearing on the increase in death rates from a multiplicity of diseases with advancing age and with amount of cigarette smoking." [Auerbach, O., Hammond, E.C., Garfinkel, L., Thickening of Walls of Arterioles and Small Arteries in Relation to Age and Smoking Habits, New England Journal of Medicine 278: 980-984, May 2, 1968.]

This study was later extended to a microscopic examination of arterioles of heart muscle. Fibrous thickenings in the walls of these small blood vessels were found in 90.7 percent of those who had smoked two or more packs a day, in 48.4 percent of those who had smoked less than one pack a day, and in none of those who had never smoked regularly. [Auerbach, O., Carter, H. W., Garfinkel, L., Hammond, E. C. Cigarette smoking and coronary artery diseases: A macroscopic and microscopic study. Chest 70(6): 697-705, December 1976.]

Nicotine Cuts Oxygen and Speeds Heartbeat

Cigarette smoking stimulates certain glands to release adrenalin and other powerful hormones which cause the walls of the heart to contract more strongly and more often, increase the heart rate, and thereby increase the heart's need for oxygen and other nutrients. Certain blood vessels contract strongly under the influence of these hormones.

But at the same time, the carbon monoxide (CO) in cigarette smoke replaces as much as twelve percent of the oxygen which would normally be carried by the red cells in the blood with carboxyhemoglobin (COHb–a tight band of CO and hemoglobin.) So, while the smoker's heart needs more oxygen, it gets less. The lack of oxygen in the blood may contribute to the development of atherosclerosis. [SC 1971, p. 36]

Exposed Occupations

A study of Parisian taxi drivers showed that smokers of 15 cigarettes a day had four times the level of carboxyhemoglobin as those smoking fewer than five cigarettes a day. Blast furnace workers were tested at the end of their shift; nonsmokers had between 4.0 and 4.9 percent of total carboxyhemoglobin. Those who smoked more than 20 cigarettes a day had blood levels of 8.5 percent. "It is evident that if air pollution is a pathogenic factor it is small in comparison with smoking." [WHO 1979, p. 27]

Smoking Pilots Risk Death

A 45-year-old male airplane pilot who smokes 20 cigarettes a day has a risk of sudden death 2.8 times greater than that of a nonsmoking pilot, irrespective of other risk factors. Tobacco smoke significantly interferes with the physical and mental abilities that are so important for pilots. The limitations include visual impairment, timing or temporal impairment, and impairment in decision-making and coordination. Many are the result of increased carboxyhemoglobin level in the blood. [WHO 1979, p. 27]

Other Effects

Smoking cigarettes also damages breathing capacity; thus, a smoker takes in less air with each breath than a nonsmoker. This further diminishes the amount of oxygen available to the overworked heart of a smoker. [SG 1971, p. 146 et seq.]

Another mechanism related to smoking affects the platelets —a fraction of the blood which causes clots. Smoking seems to cause the platelets to adhere "which might contribute to acute thrombus (clot) formation." [SG 1971, p. 9]

Conclusions

". . . Smoking is one of three major independent risk factors for heart attacks, [both] fatal and nonfatal . . . and sudden cardiac death in adult men and women. Moreover, the effect is dose related, and synergistic with other risk factors for heart attack . . ."

". . . Cigarette smoking is associated (in limited autopsy studies) with more severe and extensive atherosclerosis of the aorta and coronary arteries than is found among nonsmokers . . . While more data might be desirable . . . there is no reasonable doubt that cigarette smoking enhances atherogenes [establishing] a fundamental rationale for the findings on the incidence of heart attack, including sudden cardiac death, aortic aneurysm, and peripheral vascular disease in relation to smoking. It is somewhat uncertain, but likely, that smoking has an adverse effect on the recurrence of heart attack among survivors of a prior myocardial infarction."

". . . Epidemiologic data on the association between cigarette smoking and angina pectoris and cerebrovascular disease (stroke) are not conclusive . . . There is no apparent relationship between smoking and the incidence of hypertension, [although] smoking joins with hypertension to affect the patient with the cardiovascular burden of both risk factors.

"It should be noted, however . . . that risk (of coronary heart disease) in smokers reverts to normal or nonsmokers' levels after they cease to smoke . . ." [SG 1979, pp. 4-63-6]

V–EMPHYSEMA, CHRONIC BRONCHITIS AND OTHER NONCANCEROUS LUNG DISEASES

"When patients with bronchitis are asked if they have a cough they not infrequently reply 'yes, like everyone else.' They do not realize that people with healthy lungs have no cough and produce no phlegm." [Royal, p. 69]

Smokers cough more than nonsmokers and produce more sputum. This can occur very soon after the onset of smoking and even when the number of cigarettes smoked is very small. [Smoking Or Health–Third Report of College of Physicians, Pitman, London, 1977, p. 77] Respiratory infections, including postoperative ones, are more common in smokers, who take longer to recover.

Cigarette smoking acts independently of and synergistically with the other risk factors contributing to bronchitis. In developed countries it is now the most important cause of chronic bronchitis." [WHO 1979, p. 20]

Definitions

Chronic bronchitis and pulmonary emphysema are often linked, because they are frequently found together, and because they seem to be produced by similar causes and mechanisms. Clinically pure forms of chronic bronchitis and emphysema are the exceptions rather than the rule, and lung cancer is often also seen in the same patients.

Chronic bronchitis is defined as the "chronic or recurrent excessive mucus secretion of the bronchial tree." [SC 1971, p. 139] It is identified by two symptoms, (1) chronic cough which produces (2) sputum. The sputum may be clear, but often contains pus—because people with chronic bronchitis are highly susceptible to lung infections. Teen-agers, who smoke as few as five cigarettes a day, cough and spit almost as much as an adult heavy smoker.

The longer a person with chronic bronchitis smokes, the worse the condition becomes. The air passages in the lungs become progressively narrowed, making it harder and harder to breathe. This is often worsened by the fact that so many people with bronchitis also have emphysema.

Pulmonary emphysema destroys the tiny air sacs in the lung where oxygen is absorbed into the body. As the walls between the sacs are destroyed, the sacs become larger—but, because fewer in number, they offer less total surface from which oxygen can be absorbed. Hence, more and more breaths are required. A normal adult expends about 5 percent of his energy in breathing; a person with advanced emphysema uses up to 80 percent of his strength just to breathe. He is constantly exhausted, gasping for air.

Deaths from pulmonary emphysema and chronic bronchitis (known together as COLD—Chronic Obstructive Lung Disease) have increased greatly in the United States in recent years.

In 1945, there were only 2,088 such deaths listed in the United States. [Diehl, 88-90] In 1977, the figure had risen to 23,000 deaths per year. Chronic bronchitis and emphysema rank second only to coronary artery disease as a cause of Social Security-compensated disability. [SC 1979, p. 6-7]

In the United Kingdom, with a population only one fourth that of the United States, there are more than 30,000 such deaths each year; and 35,000,000 man-days are lost from work annually as the result of emphysema and chronic bronchitis. This is ten to 12 times the number of days lost through industrial disputes. [Royal, p. 69]

Smokers Vulnerable to COLD Death

Cigarette smoking is the most important cause of COLD. Cigarette smokers have higher mortality rates from chronic bronchitis and emphysema, an increased prevalence of respiratory symptoms, and diminished performance on pulmonary function testing compared to nonsmokers. These differences become more marked as the number of cigarettes increases. [SC 1979, p. 6-7]

The most recent data from a 20-year followup of 34,440 British male physicians found a 1.5-fold higher death rate from COLD in smokers who inhaled than in smokers who did not inhale. [Doll, R., Peto, R. Mortality in relation to smoking: 20 years' observations on male British doctors. British Medical Journal 2: 1525-1536, 1979]

A number of recent studies have established a higher prevalence of respiratory symptoms in adolescent, teenage, and young adult smokers as compared with nonsmokers. In a study of 14,033 child smokers, aged 10 to 12½ in the United Kingdom, more were found than their nonsmoking classmates. [Bewley, B., Bland, J. M., Smoking and respiratory symptoms in two groups of schoolchildren. Preventive Medicine 5: 63-69, 1976]

A survey of 12,595 high school students in this country reported that regular cough, phlegm production and wheezing correlated strongly with cigarette smoking. [Rush, D. Changes in respiratory symptoms related to smoking in a teenage population: The results of two linked surveys separated by one year. International Journal of Epidemiology. 5 (2): 173-178, 1976]

More Sensitive Breathing Tests

New refinements in measuring lung function now make it possible to pinpoint early changes in small airways of the tracheobronchial tree, those with diameters of two millimeters or less. Cigarette smokers show abnormal changes in the small airways which are absent from the lungs of nonsmokers. Cigarette smoking can obliterate more than 50 percent of the small airways without producing significant signs when conventional methods of measuring pulmonary function are used. Evidence from a number of different laboratories and clinics indicates damage to small airways in from 35 to 66 percent of asymptomatic cigarette smokers. Damage to the small airways has also been reported in teenage smokers with histories of smoking as brief as one to five years. [SG 1979, pp. 6-10-22]

These sensitive new tests now offer the possibility of detecting early signs of emphysema and chronic bronchitis before the patient develops symptoms.

Air Pollution

A number of studies have been made in different places at different times among workers exposed to high concentrations of polluted air at work. Although all these workers have more lung diseases than in the rest of the population, the great preponderance of such diseases is invariably found, as of lung cancer, among cigarette smokers.

Studies of workers in the mechanical, chemical, ceramics, foundry or marble, corn-mill, mining, tire cutting, asbestos, construction, cement, rubber, cork and other industries have shown a higher incidence of respiratory diseases among smokers than among nonsmokers exposed to the same occupational hazards. [WHO 1979, p. 26]

Increased prevalence of pulmonary diseases has been demonstrated in areas of air pollution in the Netherlands, Japan and

Poland but these studies were poorly controlled for socioeconomic status and smoking habits. In a study of telephone installers and repairmen in Baltimore, New York City, Washington, D.C., and rural Westchester County, New York, researchers were unable to find any relation between pulmonary symptoms and degree of urbanization of place of work or residence. They were, however, able to establish a strong correlation between smoking habits and pulmonary symptoms. [Comstock, G. W., Stone, R. W., Sakai, Y., Matsuya, T., Tonascia, J. A., Respiratory findings and urban living. Archives of Environmental Health 27 (3): 143-150, September 1973.]

In a 1964 survey in the United States and an earlier one (1951) in the United Kingdom, rates of such illnesses as chronic bronchitis, asthma, and emphysema, were greater among those in lower socioeconomic groups. Recently, however, a study of 9,226 residents of Tecumseh, Michigan, found that most of the differences in incidence of chronic bronchitis in people of differing occupational, educational, or income classes were attributable to differences in smoking habits. Compared with smoking, poor occupations, educational background, and economic circumstances had only a weak deleterious effect. [Higgins, M. W., Keller, J. B., Metzner, H. L., Smoking, socioeconomic status, and chronic respiratory disease. American Review of Respiratory Disease 116: 403-410, 1977.]

As a result of these and other studies, it is concluded that if air pollution increases risk of COLD, this increase must be small compared to that related to cigarette smoking under conditions of air pollution to which the average person is exposed. [SC 1979, p. 6-38]

Polish Workers

A Polish study of 280 workers in the Electro-mechanical Cooperative in Warsaw, concentrating on those who had smoked a pack or more a day for ten years, revealed that:

1. Smokers become ill 3.5 times as often as nonsmokers, and that absenteeism caused by smoking-related disease was up to five times as frequent among smokers.

2. Nonsmokers were 1.5 times as immune to colds as smokers. Smokers "often became the first to contract influenza."

3. Smokers have twice as many on the job accidents as non-

smokers. [Job Absenteeism among Habitual Smokers, Korsak, A., World Smoking and Health, Vol. 2, No. 2, Fall, 1977, pp. 15-17]

Interaction Between Smoking and Occupational Exposures

Both smoking and occupational exposures are known to contribute to disease—mainly involving the lungs, cardiovascular system, kidneys, bladder, and central nervous system. Now attention is being given to the ways these two factors may act together:

1. Tobacco products may serve as vectors by becoming contaminated with toxic agents; or 2. workplace chemicals may be transformed into more harmful agents by the chemicals in smoke. Certain toxic agents may be found both in the workplace and in tobacco, increasing exposure, causing an additive or, in some cases, an exponential effect. Smoking may also contribute to accidents in the workplace.

Tobacco Contaminants

The National Institute for Occupational Safety and Health (NIOSH) has identified a number of potential contaminants found in tobacco products including inorganic fluorides and mercury, lead, dinitro-ortho-creosol, formaldehyde, boron trifluoride, organotin, methyl parathion, and carbaryl. In addition, hydrogen cyanide has been found in cigarette smoke in significant concentrations, and cigarette smoking also contributes to increased exposure to carbon monoxide. Other harmful chemical agents found within tobacco and in the workplace include acetone, acrolein, aldehydes, arsenic, cadmium, formaldehyde, hydrogen sulfide, ketones, lead, methyl nitrite, nicotine, nitrogen dioxide, phenol, and polycyclic compounds. [SG 1979, p. 7-7-9]

In a study of Boston fire fighters, both occupation and cigarette smoking contributed to chronic nonspecific respiratory disease. [Sidor, R., Peters, J. M., Prevalence rates of chronic nonspecific respiratory disease in fire fighters. American Review of Respiratory Disease. 109 (2): 255-261, February 1974]

NIOSH has recommended that workers exposed to certain substances refrain from smoking, but that this curtailment should also be accompanied by simultaneous control of occupational exposures to toxic physical and chemical agents. [SG 1979, p. 7-18]

Lung Protection

Among the main protective mechanisms of the lungs are the cilia—tiny hairlike structures which line airways and beat, like a waving field of grain, moving the mucus blanket constantly outward. This process rids the lungs of foreign particles. Inhaled smoke stops the movement of cilia and gradually destroys them.

The respiratory mucus blanket is, itself, secreted by goblet cells. When the lining cells of the lung are denuded, the number of goblet cells increases as does mucus production. This is thought to be one mechanism that initiates bronchitis in smokers.

Another way lungs clear themselves of foreign matter is through the activity of macrophages, a type of cell whose function is to ingest foreign matter and transport it, via the blood or lymph systems, to one of the body's excretory organs. This process is known as phagocytosis. The activity of the macrophages is also inhibited by cigarette smoke. [SG 1971, p. 176] [SG 1979, p. 6-31]

Other Effects of Smoke

Two other major possibilities of how smoking may damage the lungs are:

1. Altering Protease-Antiprotease Balance

Emphysema is characterized by irreversible destruction of tissue, mainly of the protein elastin, an important component of lung connective tissue. Elastin can be attacked and destroyed by enzymes called proteases, released by white blood cells and macrophages, as part of the body's normal defense mechanisms. Antiproteases, found primarily in blood serum, serve to check proteases. If, for any reason, this balance is upset and excess protease accumulates, it digests elastin, permanently destroys lung tissue, and enlarges respiratory air spaces.

Smoking is the major factor in upsetting the bodily balance between proteases and antiproteases. The damage is done to macrophages, to which cigarette smoke is toxic. When these cells are injured by exposure to smoke, they die, releasing large quantities of proteases in the process. Furthermore, antiproteases are inhibited from counteracting protease activity in the presence of cigarette smoke. [SG 1979, 6-26-30]

2. Compromising Immune Mechanisms

Inhalation of tobacco smoke produces significant changes in immune mechanisms in both animals and people. The ability of macrophages to engulf bacteria and other foreign substances is impaired in smokers, and the total number of macrophages is increased. Changes in their ultrastructure have also been observed in smokers, which are absent in nonsmokers.

Lymphocytes (white cells), important in the body's defense system, have been recovered in greater numbers (by human bronchopulmonary lavage) from smokers than from nonsmokers.

These observations indicate considerable physiological impairment of immune mechanisms in smokers. [SG 1979, p. 6-30-32]

Conclusions

"Cigarette smoking, even in young age groups, produces lung damage. Cessation of smoking leads to at least partial resolution of symptoms. Pulmonary function and histologic abnormalities have been observed in young smokers, confirming clinical suspicions of lung damage in this group."

". . . pulmonary functional abnormalities, believed to represent small airway dysfunction, occurs (sic) in smokers . . . It has been suggested that such changes may be precursors of more extensive anatomic-functional abnormalities if smoking were continued."

". . . A number of recent investigations have suggested that destructive lung changes . . . may result from excess liberation of or failure to inhibit, proteases in the lung. Cigarette smoke has been demonstrated to impair a variety of functions of the human alveolar macrophage."

"Most of the differences in the prevalance of chronic bronchitis in subjects of differing occupational, educational, or income classes can be attributed to differences in smoking habits." [SG 1979, pp. 6-39-42]

VI–SMOKING AND PREGNANCY DRUG METABOLISM, MEDICAL TESTS

Pregnancy and Infant Health

More and more data show that cigarette smoking during pregnancy has a significant adverse effect upon the well-being of the fetus, the health of the newborn baby, and the future development of the infant and child.

Stillbirth and Low Birthweight

Women who smoke during pregnancy have significantly more stillbirths, and more of their babies die during the first month of infancy, than those of non-smoking mothers. One study of 2,000 pregnant women concluded that 20 percent of the unsuccessful pregnancies "would have been successful if the mother had not been a regular smoker." [Russell, C. S., Another Hazard of Smoking, New Scientist, 41 (631) p. 64-65, January, 1965]

A prospective British study of 17,000 births showed that "the mortality in babies of smokers was significatly higher than in those of nonsmokers." The reason: "the excess of low birthweight babies" [Butler, N. R., Alberman, E. D., Prenatal Problems, Edinburgh, E. & S. Livingstone, Ltd. 1969, p. 72-84]

"Low birthweight" refers to babies premature by weight, (under 5½ pounds.) In a study of 100,000 births, smoking mothers' babies weighed on the average 6.1 ounces less than those of non-smoking mothers. [SG 1971, p. 389, also Table 2, pp. 397-399]

Low birthweight is related more to smoking than to any other factor. And it is related to the length of time the pregnant woman smokes before giving birth. In 48,000 pregnancies, the mothers who did not smoke had the largest babies; those who smoked during only the first part of their pregnancy, had smaller babies; and those who smoked during the entire pregnancy had the smallest babies. [SG 1971, p. 389-390]

The more a woman smokes during pregnancy, the greater the reduction in her infant's birth weight, according to a large number of studies. However, if a woman gives up smoking during pregnancy, her risk of delivering a low-birth-weight baby becomes similar to that of a nonsmoker. [SG 1979, p. 8-12]

In one large study, the most significant differences between smoking and nonsmoking pregnant women, in risk of "perinatal" death (in the developed fetus or soon after birth) and in pregnancy complications, were found to occur at the gestational ages from 20 weeks to 32 to 36 weeks. [Meyer, M. B., Tonascia, J. A., Maternal smoking, pregnancy complications, and perinatal mortality, American Journal of Obstetrics and Gynecology 128 (5): 494-502, July 1, 1977]

Physiologic Effects in Pregnancy

Smoking causes an increase in the amount of carbon monoxide in the blood, and, therefore, a decrease in its oxygen content. When a pregnant woman smokes, this oxygen-poor blood circulates through the fetus. Dr. L. D. Longo stated that "the decreased availability of oxygen . . . is probably injurious to fetal tissue." [Carbon Monoxide in the Pregnant Mother and Fetus, Annals of the N.Y. Academy of Sciences 174 (1): 313-341, October 5, 1970]

When rats and rabbits are exposed to nicotine or cigarette smoke, they have more unsuccessful pregnancies and smaller offspring than control animals. Studies in mice have showed that nicotine (and its metabolites) accumulate in the placenta—the membrane around the fetus—and pass into the fetus. [SG 1971, pp. 407 and 415]

In one of the few studies of simulated marijuana smoking in animals, it was reported that guinea pigs exposed to marijuana smoke showed an increased maternal heart rate during the smoking period, and changes were observed in both maternal and fetal electroencephalograms. [Singer, P. R., Scibetta, J. J., Rosen, M. G. Simulated marijuana smoking in the maternal and fetal guinea pig. American Journal of Obstetrics and Gynecology 117: 331-340, October 1, 1973]

Long-Term Effects in Children

A long-term follow-up study showed that when the mothers had been heavy smokers during pregnancy, their children at the age of seven were shorter in stature and had retarded reading ability and lower ratings on "social adjustment" than the children of nonsmoking mothers. [Butler, N. R. A National Long-Term Study of Perinatal Hazards, presented at 6th World Congress of Gynecology-Obstetrics, New York, April 12-18, 1970, 11 pp.]

Another long-term study demonstrated some significant differences in favor of nonsmokers' children with respect to behavior ratings and school placement. [Dunn, H. G., McBurney, A. K., Ingram, S., Hunter, C. M. Maternal cigarette smoking during pregnancy and the child's subsequent development: II Neurological and intellectual maturation to the age of 6½ years. Canadian Journal of Public Health 68: 43-50, January/February 1977]

Peptic Ulcer

Male cigarette smokers get more stomach ulcers and also die of peptic ulcer more often than do nonsmokers. Antacid treatment for stomach ulcer is less effective in smokers than in nonsmokers, and healing is slower. [SG 1971, p. 423]

In one study, the interrelationships among coffee, alcohol, and smoking were examined in 36,656 men and women, aged 30 to 59; 2,597 of them had a history of peptic ulcer disease. Men who smoked had a 2.1-fold greater frequency of ulcer disease than those who did not smoke and women had a 1.6-fold greater frequency. Neither coffee drinking nor alcohol consumption alone was related to increased occurrence of peptic ulcer disease. [Friedman, G. D., Siegelaub, A. B., Seltzer, C. C. Cigarettes, alcohol, coffee and peptic ulcer. The New England Journal of Medicine 290 (9): 469-5 473, February 28, 1974]

In studies done at different times and in four different countries (Britain, Poland, Israel, and the United States), peptic ulcer was found 70 to 90 percent more frequently in both men and women who smoked than in nonsmokers. Ex-smokers also had consistently greater evidence of peptic ulcer. [SG 1979, p. 9-8]

Allergy and Pharmacology

Tobacco and its products, including smoke, can affect the immune system in two ways: as antigens, where they interact with the immune system to induce specific responses such as production of antibodies or sensitized cells; or as irritant, pharmacologic, and toxic agents, interacting with the host defense system and influencing the functional ability of these elements.

There is evidence that tobacco leaf and its products are antigenic in animals and man, but the evidence that tobacco smoke is antigenic in man is meager and controversial at present. [SG 1979, p. 10-9] Nicotine is not the responsible antigenic component of tobacco leaf, but five plant proteins have been isolated from tobacco leaf and found to possess the property of precipitating human sera, a test for antigenicity. [Panayotopoulos, S., Gotsis, N., Papazoglou, N., Concouris, L. Antigenic study of nicotiana tabacum and research on precipitins against tobacco antigens in the serum of smokers and nonsmokers. Allergologia et Immunopathologia 2 (1): 111-114, January/February 1974]

Asthma or hay fever affect as much as 15 to 17 percent of the population in the United States. Studies of active and passive smoking have shown that allergic individuals, especially those with asthma or rhinitis, may, in fact, be more sensitive to the nonspecific noxious effects of cigarette smoke than healthy individuals. [SG 1979, p. 10-24]

Effect of Passive Smoking: Pharmacology

Tobacco smoke can be a significant source of atmospheric pollution in enclosed areas. The total smoke exposure of nonsmokers is much smaller than that of smokers, but the ambient smoke may be qualitatively richer in certain compounds, such as nicotine, carbon monoxide and ammonia. There are no data linking increased risk of lung cancer to passive inhalation of tobacco smoke.

Nicotine in the air is of concern because it is considered to be one of the factors contributing to atherosclerotic cardiovascular disease in cigarette smokers. However, urinary nicotine measured in nonsmokers under conditions of severe tobacco smoke pollution showed values substantially below those for urinary nicotine in smokers. [Russell, M. A. H., Feyerabend, C., Blood and urinary nicotine in nonsmokers. Lancet 1 (7900): 179-181, 1975]

Carbon monoxide, at levels occasionally found in smoke-filled environments, can produce slight deterioration in attentiveness and cognitive function. But effects of carbon monoxide at levels found in motor vehicles, for example, were found to be insignificant. The combined effect of alcohol and carbon monoxide could be demonstrated. [Medical College of Wisconsin. Exposure of humans to carbon monoxide combined with ingestion of ethyl alcohol and the comparison of human performance when exposed for varying periods of time to carbon monoxide. Medical College of Wisconsin, Department of Environmental Medicine, Milwaukee, 1974, 39 pp.]

Adult Reactions to Passive Smoking

In a 1975 telephone survey, smokers and nonsmokers were asked: "Is it annoying to be near a person who is smoking cigarettes?" Thirty-five percent of male smokers and 34.5 percent of female smokers replied "Yes" as did 77 percent of males and 80.5 percent of females who had never smoked. Effects of ambient smoke vary with the individual, ranging from minor eye and throat irritations to anginal attacks. [National Clearinghouse for Smoking and Health. Adult Use of Tobacco, 1975. U.S. Department of Health, Education, and Welfare, Public Health Service, Center for Disease Control, Bureau of Health Education, National Institutes of Health, National Cancer Institute, National Clearinghouse for Smoking and Health, June 1976, 23 pp.]

Passive Inhalation in Children

"The risk of a young infant developing bronchitis or pneumonia in the first year of life is doubled if its parents smoke. The risk is increased if the parents also cough and produce phlegm. Wheezing in children up to age five is more common if the parents smoke. A study of 4,000 Paris schoolchildren and students ages 10-20 showed that adnoidectomy and/or tonsillectomy, considered as an index of repeated upper respiratory tract disease in early childhood, was very significantly related to the amount of smoking by each parent. [WHO 1979, p. 22]

Interactions of Smoking with Other Substances

Since cigarette smoke is a complex mixture of noxious substances, it is not surprising that it can affect and interact with drugs, food constituents, and responses to diagnostic tests. Much of the experimental work in man, animals and tissues indicates that the dominant drug-interaction effect of smoking involves enzymes in the liver.

Phenacetin and Theophyline

". . . the frequency of altered disposition and pharmacological effects of many common drugs in smokers make it apparent that cigarette smoking should be considered as one of the primary sources of drug interactions in man." [SG 1979, p. 12-23] As one example, studies in man and animals given phenacetin, a common pain killer, show lower levels of phenacetin in smokers than in nonsmokers. Researchers attributed this to increased metabolism of the drug by enzymes. "Cigarette smoking may necessitate modification of drug therapy and later organ function or responsiveness." [SC 1979, p. 12-28] The dosing of theophyline, a bronchodilator with a narrow therapeutic range, is seriously affected by smoking.

Analgesic and Psychotropic Drugs

"Smokers differ from nonsmokers in their pain threshold, psychosomatic characteristics and drug consumption; the presence of substances, such as nicotine, which cause competing or additive pharmacological effects, may complicate the action of drugs used in treating pain or anxiety . . ." [SC 1979, p. 12-45]

Marijuana

Marijuana smoking also affects liver enzymes concerned with drug disposition. It has recently been estimated that 13 million people in the United States now smoke marijuana. [Abramowicz, M. (Editor), Marijuana. Medical Letter on "Drug and Therapeutics. 18 (17): 69-70, August 13, 1976]

The Pill

In 1973, a report was published stating that cigarette smoking might enhance the risk of thromboembolism or cardiovascular disease in women who use oral contraceptives. A subsequent report showed that women who took the pill and smoked one pack of cigarettes per day had a 200 percent increased risk of a stroke. [Collaborative Group for the Study of Stroke in Young Women. Oral contraceptives and stroke in young women: Associated risk factors. Journal of the American Medical Association 231 (7): 718-722, February 17, 1975.] In another study of oral contraceptive users, the relative risk of heart attacks increased from 1.2 in women smoking fewer than 15 cigarettes a day, to 4.1 in women smoking 15 to 24 cigarettes a day, and to 11.3 in women smoking 25 or more cigarettes a day. [Mann, J. I., Vessey, M. P., Thorogood, M., Doll, R. Myocardial infarction in young women with special reference to oral contraceptive practice. British Medical Journal 2: 241-245, May 3, 1975] A third study showed excess annual deaths of 1 per 10,000 for oral contraceptive users who had quit smoking and 1 per 3,000 users who continued to smoke.

Obesity

Although many individuals who have given up smoking report significant weight gains, there is no measureable change in resting metabolic rate in former smokers who have quit. [Sims, E. A. H. Experimental obesity, dietary-induced thermogenesis, and their clinical implications. Clinics in Endocrinology and Metabolism. 5 (2): 377-395, July 1976]

Amblyopia, Osteoporosis, Vitamins

Smoking is linked with amblyopia (an eye disease) and osteoporosis (loss of calcium from the body). "Smoking causes changes in plasma and leukocyte concentrations of vitamin C and impairs biochemical functions of this vitamin. Vitamin B-12 is metabolized in the detoxification process of cyanide derived from smoking. Some heavy smokers develop an amblyopia which is reversed by either vitamin B-12 supplementation or termination of smoking. Evidence is also presented suggesting that smoking may alter the metabolism of lipids, carbohydrates, proteins, and other vitamins such as vitamin B-6." [SG 1979, p. 12-68]

Diagnostic Tests

Testing normal individuals, not suffering from any smoking-related disease or any other disease, researchers have found that "smoking causes significant changes in the 'normal' values in various biochemical and clinical tests that may be done routinely in a clinical laboratory." Such tests include white blood cell counts (higher in smokers), measurements of other blood components (smokers "showed increases in hemoglobin, hematocrit and mean corpuscular volume"). Some studies have found higher cholesterol levels in heavy smokers; others have not. Smoking seems to decrease creatinine, albumin and globulin levels; increase uric acid. Platelets, a clotting factor in blood, go up in smokers, as do other blood viscosity factors: fibrinogen, plasma viscosity, and red cell aggregation. [SG 1979, pp. 12-79, 82, 83, 84, 86]

Carcinoembryonic antigen (CEA), a marker for certain cancers used to monitor treatment, is elevated in smokers; the blood levels of CEA decline to normal levels three months after quitting smoking.

Among the Surgeon General's conclusions:

"The majority of the blood components elevated due to cigarette smoking appear to revert to approximately normal levels after cessation of smoking.

"The smoking status of an individual should be included in reports of clinical/diagnostic tests performed on that individual." [SG 1979, p. 12-87]

Smoking and Fires

In 1979, the National Fire Protection Association (NFPA) reported that more fatal fires are caused by cigarettes than by any other source of combustion. These fires result in an estimated 2,500 deaths each year in the United States. In a special analysis of the ignition of fatal fires reported to the Association for the years 1971-1978, the NFPA found that cigarette-caused fires account for 40.2 percent of fatal fires with known ignition sources and 34.9 percent of corresponding fire deaths. The next leading accidental ignition source (match, lighter, candle) accounts for 9.9 percent of the fatal fires and 9.6 percent of the fire deaths. Many of these are also related to smoking.

The National Fire Protection Association analyzed the most common areas of fire origin and materials ignited in fatal fires started by cigarettes in Table V, p. 54.

In addition to the fatalities, an NFPA analysis found that at least 25,000 people were injured during 1977 in residential fires ignited by cigarettes and that approximately $313 million in property was lost in these fires.

California State Fire Marshal Philip C. Favro testified on March 22, 1977 at the first session of the American Cancer Society's National Commission on Smoking and Public Policy, held in Los Angeles, that of more than 1.2 million fires in the United States in 1975, about 19 percent, or 225,000, were caused by smoking.

Table V

FATAL FIRES STARTED BY CIGARETTES

The Top Ten Ignition Scenarios

Material Set On Fire	Area Where Started	Percent of Deaths	Percent of Fire
Upholstered furniture	Living room	43.9	40.1
Bedding	Bedroom	30.8	34.3
Upholstered furniture	Bedroom	2.9	3.1
Bedding	Living room	2.4	2.3
Rubbish	Kitchen	2.3	1.7
Clothes on a person	Bedroom	1.9	2.7
Clothes on a person	Living room	1.5	2.1
Soft goods other than bedding or clothes on a person	Bedroom	1.3	1.2
Clothes on a person	Kitchen	1.0	1.4
Furniture (type undetermined)	Living room	1.0	0.7

Source: National Fire Protection Association.

Based on 3,037 deaths in 2,131 accidental fires in the United States reported to the Association for the years 1971-1978. The ten scenarios in this Table accounted for 89.0 percent of these deaths and 89.6 of these fires.

VII–THE SMOKING HABIT: PSYCHOLOGY AND PHARMACOLOGY

Smoking is a complex act involving learned behavior, pleasure–or reduction of unpleasant situations–a stimulating and possibly habituating and/or addictive drug (nicotine), and a variety of other chemicals with an enormous number of physiological effects. Most research in helping smokers quit has used learning theory, based on behavior modification.

Learning theory regards smoking as behavior acquired under social reinforcement, typically peer pressure–since most smokers begin as teenagers when peer pressure is most potent. At first inhaling tobacco smoke is repugnant. Each puff increases physical tolerance, and builds the habit. Eventually, smoking produces enough reinforcement to sustain itself without social pressures.

The number of emotional events, both positive and negative, that can influence smoking is potentially very great. To modify smoking behavior may require a variety of intervention techniques in a spectrum of situations. And it is complicated by the fact that smoking provides instant reinforcement from the physiologically powerful drug, nicotine. [SG, 1979, pp. 16-5-7]

Nicotine

Nicotine from an inhaled cigarette reaches the brain in seven seconds (twice as fast as from an intravenous injection). A pack-a-day smoker takes more than 70,000 puffs a year, a frequency of "shots" unmatched by any other drug taking. Thus, the habit is tremendously "overlearned." And its serious ill effects, of which smokers are aware, come years later; thus seem very remote.

Nicotine is the most powerful pharmacological agent in cigarette smoke; other ingredients that exert chemical effects on the body are carbon monoxide and tar (particulate matter, a mixture of several thousand chemicals.) One study in which tar and nicotine were varied and dissociated, showed that the number of cigarettes smoked was related to the nicotine content but not to the tar. [Glauser, S. C., Glauser, E. M., Reidenberg, M. M., Rusy, B. F., Tallarida, R. J. Metabolic effect in man of the cessation of smoking. Pharmacologist 11 (2): 283, 1969. (Abstract)]

The results are consistent with the idea that people smoke tobacco to obtain nicotine although smokers will smoke nicotine-free cigarettes.

Many report that they smoke when stressed. Some investigators consider that nicotine is the primary reinforcer because of its role in reducing tension and distress, associated with nicotine deprivation. But the evidence is not conclusive. [Jarvik, M. E., Biological factors underlying the smoking habit. In Jarvik, M. E., Cullen, J. W., Gritz, E. R., Vogt, T. M., West, L. J. (Editors). Research on Smoking Behavior. NIDA Research Monograph No. 17. U.S. Department of Health, Education, and Welfare, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration, National Institute on Drug Abuse, DHEW Publication No. (ADM) 78-581, December 1977, pp. 122-148] [SG 1979, p. 15-8]

Genetic Predisposition

An ongoing study using identical twins has reported evidence of a genetic predisposition to smoke. However, this seems doubtful. The most recent review concludes that "the theory of genetic predisposition is disproved by the smoking discordance among monozygotic [identical] twins." [Ramström, Lars, M., Ph.D., "The Swedish Twin Study—Publicity & Criticism," *World Smoking & Health*, 3 (2): 14-19, 1978]

Hormonal Factors

Hormonal changes in puberty occur at about the same time that individuals start smoking; thus, endocrine responses and smoking have been examined for possible links with smoking.

Growth hormone and ACTH were measured in nonsmokers after smoking two cigarettes. A rapid increase in both hormones was observed, but no significant change in others, e.g. LH (luteinizing hormone), FSH (follicle stimulating hormone, TSH (thyroid stimulating hormone), and testosterone (male hormone) levels. [Winternitz, W. W., Quillen, D. Acute hormonal response to cigarette smoking. Journal of Clinical Pharmacology 17 (7): 389-397, July 1977] Vasopressin (a hormone affecting the contraction of blood vessels) levels are also affected by nicotine.

Smoking Cessation

Significant physiological changes occur immediately on smoking cessation in heart rate, diastolic blood pressure, excretion of adrenalin and norepinephrine, EEG, cortical alpha activity of the brain, and cardiopulmonary function tests.

Many ex-smokers report feelings of well-being and improved health, but others experience a wide variety of temporary unpleasant side effects including craving for tobacco, irritability, restlessness, dullness, sleep and gastrointestinal disturbances, anxiety, impairment of concentration, judgment, and psychomotor performance.

Withdrawal symptoms of varying severity following cessation are the principal reasons cited for relapse to smoking. Women are more likely to fail in smoking cessation efforts than men, and it is possible that there is a sex difference in withdrawal symptoms. [Guilford, J. S., Factors Related to Successful Abstinence from Smoking. Pittsburgh, American Institutes for Research, July 1966, 171 pp.]

Smoking in Adolescents and Children

The decrease in adult smoking since 1964 is paralleled to a lesser degree among teenage boys and younger teenage girls, although among older teenage girls (17-18) it continues to increase sharply. Hundreds of studies have been conducted by behavioral scientists in an effort to understand the complex factors involved in the initiation of smoking in this group. Such information is essential to create effective programs to persuade young people not to start smoking.

Between the ages of 4 to 9 or 10, children accept the fact that smoking is hazardous to health. At this age they express anxiety when they observe a parent or older sibling smoking. Yet as they approach adolescence, many of these same children may begin to smoke.

Adolescent Transition

Adolescence is the time of transition from self-definition as a family member to identification with the peer group as a source of status. Becoming a smoker may have the immediate value of being accepted by peers, of feeling more mature because smoking is an adult behavior forbidden the child, and may also serve as an act of defiance to authority figures.

The smoking parent becomes a model for the child. If both parents smoke, there is a greater likelihood that the child will begin smoking than if only one or neither parent smokes. On the other hand, parental disapproval of smoking is not a significant factor to the teenager. Both smoking and nonsmoking junior high school students in one study recognized that their parents disapproved of their smoking behavior. [SG 1979, pp. 17-13, 14]

Teenage Influences

The smoking behavior of older siblings is a possible influence on younger children. Twenty-eight to 30 percent of the boys and 25 to 26 percent of the girls who report regular smoking also have older siblings who smoke. If an older sibling and both parents smoke. a child is four times as likely to smoke as a child who has no smoking model in the family. [SG 1979, p. 17-14]

Teenagers who are employed outside the home are twice as likely to smoke as teenagers who are not employed. Students who plan to go to college are the least likely to smoke. Children in lower socioeconomic levels are more likely to smoke but socioeconomic status correlates less with smoking than with parental smoking or poor scholastic performace. The influence of the mass media in the initiation of smoking is difficult to establish.

Teenage smokers seldom consider the decision to smoke a wise one. In an American Cancer Society study, 78 percent of 4th graders associated smoking with cancer. Seventy-seven percent of teenage smokers believe that it is better not to start smoking than to have to quit. Eighty-four percent say smoking is habit forming, and 68 percent think that it is a bad habit. [SG 1979, p. 17-8]

Decisions

In view of this, the U.S. Public Health Service suggests: "It is futile to continue to tell teenagers that smoking is harmful. . . . The most effective thing that we can do is to help them to understand the benefits of smoking as compared with the costs and dangers so that they will have the facts that they need to make a thoughtful decision as to whether to smoke or not to smoke." [National Institutes of Health. Teenage Smoking National Patterns of Cigarette Smoking, ages 12 through 18 in 1972 and 1974 U.S. Department of Health, Education, and Welfare, Public Health Service, National Institutes of Health, DHEW publication, No. (NIH) 76-931, 1976, 125 pp.]

"Perhaps the real question to be answered is: why do we knowingly choose to engage in self-destructive behavior when so much of our energy is directed toward preserving our lives?" [SG 1979, p. 17-25]

Psychosocial Influences

Personality Traits of Adult Smokers

Many studies have attempted to correlate the smoking habit with various personality traits. A large British study found that smokers are greater risk-takers, more impulsive, more prone to divorce and job changing, more interested in sex and more likely to drink tea, coffee and alcohol. [Cherry, N., Kiernan, K. Personality scores and smoking behavior. A longitudinal study. British Journal of Preventive and Social Medicine 30(2): 123-131, June 1976.] In general, smokers seem to tend toward extroversion—craving excitement, willing to take risks, liking parties; they are sociable, carefree and easy going, and may be aggressive. Nonsmokers tend to be introverts—introspective, retiring, bookish, prudent, emotionally controlled, passive, and reliable.

Internal-External Control

Four of five studies showed smokers to be more externally controlled than nonsmokers. Internalized-controlled individuals tend to believe that they are masters of what happens to them; externally controlled persons tend to look to fate, luck or things beyond their control to bring them their rewards. [SG 1979, pp. 18-6, 9]

Drug Taking

Of six personality factors in drug taking, two most linked with smoking were 1) general tendency to use drugs and 2) "fear of personal reaction to drugs." Smokers of tobacco consume more marijuana, more psychotropic drugs, and more aspirin than do nonsmokers of tobacco. [SG 1979, p. 18-10]

Ex-Smokers' Personality

Former smokers express aggression more openly than either nonsmokers or smokers who never tried to stop; they also have a stronger need for achievement than any other group, a lesser need for close ties with peers, and more behavioral stability than the other groups. Neuroticism and extroversion are associated with the ability to abstain from smoking. Such individuals are high in extroversion and low in neuroticism. Male quitters are more sociable and more extroverted in their behavior. No relationship has been found between education level and smoking cessation. Successful quitters are more likely to be males than females. [SG 1979, pp. 18-17-19]

Force of Habit

There is mounting evidence that the number of cigarettes smoked per day is directly, and often markedly, related to inability to quit smoking. [West, D. W., Graham, S., Swanson, M., Wilkinson, G. Five year follow-up of a smoking withdrawal clinic population. American Journal of Public Health 67(6): 536-544, June 1977]

How to Quit

It has been estimated that 95 percent of the more than 30 million smokers who have quit since 1964 have done so on their own. About one third or fewer of smokers who are motivated to quit are interested in formal programs, a potential audience of perhaps 15 million Americans. However, only a small minority of those who express an interest in quitting actually attend such programs, perhaps because they are not universally available. The American Cancer Society has expanded its activities in this area since it is known that about 30 percent of smokers who participate in such programs are still not smoking one year later.

There have been great advances in information about smoking cessation methods in recent years, mainly based on large-scale coronary prevention trials and research clinic experience. The most critical concern is the validity of the self-report data. This has been questioned in up to 20 percent of clinic participants. Carbon monoxide in the blood appears to be a more reliable measure of smoking behavior than self-reporting.

Education and Prevention

Vast numbers of antismoking programs exist for both young people and adults. Nevertheless, it is still not known what forms of education are most effective in keeping young people from moving from experimentation with cigarettes to becoming habitual smokers. And it is still not known how best to help adults give up the smoking habit.

Teenagers (68 percent of girls and 67 percent of boys) perceive teachers as likely to be smokers. Yet an American Cancer Society survey found that only 23 percent of female teachers and 18 percent of male teachers actually smoke. [SG 1979, p. 17-15]

Most states support education as a potentially important means of preventing smoking and influencing cessation of smoking, although results to date from such programs are far from satisfactory. In 35 states, school policies on smoking education are based on state laws which expressly prohibit minors from smoking on school property. Yet the impact is believed to be negligible.

"Smoking results in a considerably increased morbidity rate, with its consequent loss of working days, absenteeism and excessive demands on medical services, both for primary and for hospital care. The cost to the community of premature death, increased illness, and loss of productive capacity resulting from cigarette smoking is very high in countries where the habit has been common for a long time." [WHO 1979, p. 10]

In the United States, it was estimated in 1976 that the average smoker spent $240 a year for 506 packages of cigarettes. Total retail expenditures for tobacco accounted for approximately 1.5 percent of disposable income. [Smoking and Alcohol Abuse; Luce, B. R. and Schweitzer, S. O. World Smoking and Health, Vol. 3, No. 2, Summer 1978, pp. 27-31]

Per capita cost for smoking-related disease is estimated at $454 annually in the United States. Total cost in the United States for major smoking-related disease and fires, including health care, lost earnings through morbidity and mortality, and property costs was estimated at $27,539,700,000 in 1976. This is 11.3 percent of the comparable aggregate costs of all U.S. illness. Total out-of-pocket health care cost of smoking-related diseases was estimated at $8.2 billion in 1976, approximately 7.8 percent of all U.S. health care costs. (ibid).

Tobacco Farming

Peak periods of tobacco growing coincide with times when agricultural labor is needed for other crops; hence, in developing countries tobacco farming may interfere with the food supply. Farmers in such countries are generally in debt to private companies; a large proportion of their income goes to transnational tobacco companies. Since most countries export little of their tobacco crop, it does not aid their balance of payments. [WHO 1979, p. 33]

"Tobacco-growing is helping to spread deserts, because huge quantities of firewood are cut annually from threatened forests to provide heat for curing the tobacco." [WHO, 1979 p. 33]

U.S. Tobacco Economics

Tobacco is a cash crop in 16 states of this country, and dominates the agriculture of several, most notably North Carolina and Kentucky[1]. It is also a major industry, whose customers spent $18 billion for its manufactured products in the U.S. in 1978, of which $16,580,000,000 went for cigarettes. Federal, state and local governments collected $6,270,000,000 in tobacco excise, sales and customs taxes in fiscal 1978. U.S. tobacco exports were valued at $2,120,000,000 in that year. Tobacco imports the same year totaled $428,000,000 exclusive of duty[2].

The U.S. Department of Agriculture has spent well over $1.5 billion on tobacco programs since 1933. Current tobacco price support loans of the Department's Commodity Credit Corporation total $750 million. Total of all such loans since 1933 is about $6 billion. Almost no interest has been paid on these loans to the government, although the Department of Agriculture paid well over $500 million in interest to the U.S. Treasury through June 30, 1974, to borrow the money. Net losses on loan principal totalled $55 million by 1974.[3] Department of Agriculture budget for tobacco loan service, tobacco inspection, marketing news and tobacco research was $54 million in fiscal 1978.[3]

It is interesting to note that all legislation thus far passed has exempted U.S. cigarettes sold in export from using the warning label, except those shipped to the U.S. Armed Forces overseas.

Consumers the world over spend an estimated $85 to $100 billion each year to buy four trillion cigarettes, about 1,000 cigarettes for every man, woman and child in the world. [Erik Eckholm, Worldwatch Paper 13, March 1978, Worldwatch Institute, Washington, D.C.]

Consumption

From 1925 to 1950 the per capita consumption of cigarettes of persons 18 years old and older in the United States rose steadily, from 1,285 to 3,522 cigarettes per year. There was a dip in 1954, the year when the American Cancer Society first published results of its first major prospective study of the effects of smoking on health (see p. 77). U.S. per capita consumption reached its peak in 1963

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1. Tobacco in the National Economy, U.S. Department of Agriculture, ASCS, March, 1970, p. 3.
2. Tobacco Situation, March, 1979, p. 17.
3. History & Evaluation of Tobacco Program 1933-74, Grove, E. Paper. 26th National Tobacco Workers Conference, Jan. 27-30, 1975, Charleston, S.C. Unpublished. Dept. of Agriculture document.

at 4,336 cigarettes, and declined in 1964, the year of the first "Surgeon General's Report." It declined again between 1968 and 1970, the period of intensive broadcasting of anti-smoking messages by the major TV and radio networks and stations. (The value of these messages in commercial time was estimated at $75 million.) [SC 1979 pp. A-5, 6, 7] In the last four years, U.S. per capita consumption has declined. In 1979 it was at the lowest point since 1958.

It is assumed that the events mentioned in conjunction with the declines in per capita consumption were operative factors, but there is no way to prove this.

Until 1967, the only assays of tar and nicotine content of certain popular brands of U.S. cigarettes available to the public were published in *Reader's Digest* magazine, and Consumers Union Reports. In 1967, the Federal Trade Commission laboratory began publishing its own assays of tar and nicotine in all U.S. cigarette brands and has continued to do so every six months.

Per Capita and Total Decline

Both the per capita and total cigarette consumption have declined consistently in the United States since 1973, reversing a general 90-year trend. The estimated percentages of men and women over age 18 who smoke cigarettes have also declined. Among men, 52.6 percent of adults smoked in 1955; this has dropped to 39.3 percent in 1975.* The percentage of female smokers rose from 24.5 percent in 1955 to a peak of 33.7 percent in 1966, and retreated to 28.9 percent in 1975. Percentages of ex-smokers among men have risen from 10.9 percent in 1955 to 29.2 percent in 1975; among women from 3.9 percent in 1955 to 14.5 percent in 1976. [SC 1979 Table 2, p. A-10]

Although the percentage of the U.S. population that smokes is smaller than it was a decade ago (see below), the United States retains its longstanding title as the world's premier cigarette-smoking country: in the mid-seventies, annual U.S. cigarette consumption was 2,750 cigarettes per capita for all citizens of all ages; Japan was second with 2,600.

How Many Smokers?

In absolute numbers, there were an estimated 53.3 million

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*Speech of Joseph A. Califano, Jr., Secretary of Health, Education and Welfare, April 26, 1979, San Francisco, Calif. Published in HEW NEWS.

U.S. cigarette smokers in 1965, and 54.1 million in 1978 of whom 48 million were over the age of 18. This small numerical growth trailed behind the increase in population; it represents, in absolute numbers, 8.5 percent fewer male smokers and 11.1 percent more female smokers. [SC 1979, pp. A-11]

Most current cigarette smokers began smoking in their teens. Today, in the United States, there are 3.3 million regular teenage smokers, 12 to 18 years of age, representing 12 percent of this age group. This is a drop of four percentage points since 1974, according to Secretary Joseph A. Califano, Jr., of HEW. He gives his sources as surveys performed by the National Clearinghouse for Smoking and Health in 1968 and 1974, and the National Institute of Education in 1979. Among teenage smokers, girls (1.7 million) now outnumber boys (1.6 million).

See tables presented by former Secretary Joseph A. Califano, Jr. of the trends in smoking in different teenage groups: (See pp. 65, 66, 67).

Who Smokes

Adult male smoking is in inverse ratio to family income, while adult female smoking increases with family income. Smoking is relatively uncommon among professionals of both sexes. [SC 1979, pp. A-14-15] But among managers and administrative personnel, the percentage of female smokers is higher than that of males. [SC 1979, p. A-16]

Male white collar workers (professionals and technical workers) have the lowest smoking rates; blue collar workers (laborers and craftsmen) have the highest. Women show the opposite correlation. Upwardly mobile men tend to smoke less and downwardly mobile men are more likely to be heavy smokers. [SC 1979, pp. A-15-16]

A study of four health professions (physicians, dentists, pharmacists, nurses) in 1975 found only 21 percent of physicians smoking in that year; 30 percent had been smoking in 1967. Twenty-three percent of dentists, and 28 percent of pharmacists were smokers; both groups showed substantial declines in smoking between 1967-68 and 1975. Only among nurses had smoking increased, from 37 percent in 1969 to 39 percent in 1975. But the great majority of all health professionals agreed that they should set a

Table VI

CIGARETTE SMOKING AMONG YOUNG PEOPLE AGE: 12-14:

- For boys, the percentage of regular smokers went

  from 2.9% in 1968
  to 4.2% in 1974
  to 3.2% in 1979

- For girls, the percentage of regular smokers went

  from 0.6% in 1968
  to 4.9% in 1974
  to 4.3% in 1979

- To sum up: a sharp drop among boys since 1974, but only a slight drop among girls.

Table VII

CIGARETTE SMOKING AMONG YOUNG PEOPLE AGE 15 AND 16:

- For boys, the percentage of regular smokers went

  from 17.0% in 1968
  to 18.1% in 1974
  to 13.5% in 1979

- For girls, the percentage of regular smokers went

  from 9.6% in 1968
  to 20.2% in 1974
  to 11.8% in 1979

- To sum up: a sharp drop among both boys and girls.

Table VIII

CIGARETTE SMOKING AMONG YOUNG PEOPLE AGE 17 AND 18:

- For boys, the percentage of regular smokers went

  from 30.2% in 1968

  to 31.0% in 1974

  to 19.3% in 1979

- For girls, the percentage of regular smokers went

  from 18.6% in 1968

  to 25.9% in 1974

  to 26.2% in 1979

- To sum up: a sharp drop among boys—but

  a disturbing, continuing rise among girls.

good example by not smoking. And the majority, except pharmacists, never smoked in front of patients. [Survey of Health Professionals, 1975. Department of Health, Education and Welfare, National Clearinghouse for Smoking and Health, Atlanta, Georgia 30333]

What They Smoke

From 1950 to 1960, the market share of filter-tip cigarettes increased rapidly from 1.6 percent to 50.9 percent. By 1975, 85 percent of current regular smokers consumed filter cigarettes. In 1979, the market share of filter-tip cigarettes exceeded 90.3 percent.

Sales of U.S. cigarettes with 15 mg or less of tar have increased from 3 percent to over 30 percent during the period 1970 to 1978. Along with this increase, there has been a decline in sales of relatively higher "tar" and nicotine brands. From 1954 to 1977, the sale-weighted average "tar" (particulate matter in smoke) per U.S. cigarette declined from approximately 36 mg to 17 mg or less, for both filter-tip and nonfilter cigarettes. A decline in the sales-weighted average nicotine per cigarette was also observed, and is now at the level of 1 mg or less in many brands [Table IX, p. 73, Table X, p. 74]

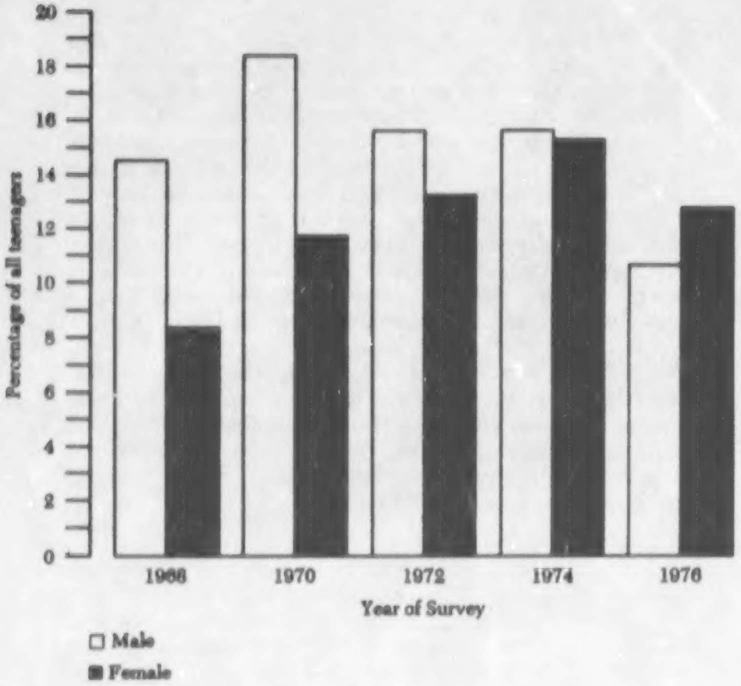
Parallel reductions in tar/nicotine have taken place in other developed countries. In Great Britain, lung cancer rates are now decreasing, and in the United States, deaths from cardiovascular diseases have begun to decline. Both effects may be attributable, at least in part, to smoking cessation patterns and to switching from high to low tar/nicotine cigarettes.

Changes in Lung Abnormalities

Some proof of these effects comes from a recent histologic study in the United States which has shown a dramatic drop in lung abnormalities in smokers who died (of diseases other than lung cancer) in the period 1970-1977, as compared with those who died in 1955-1960. A much lower proportion of abnormalities of various sorts—cells with atypical nuclei, lesions with no cilia and basal cell hyperplasia—were found in the bronchial epithelium of smokers who died between 1970-77 than in those who died between 1955-60. Those who died in 1970-1977 must have smoked lower tar and nicotine cigarettes than the earlier group because all brands had decreased tar and nicotine content.

Figure 4

PERCENTAGE OF CURRENT, REGULAR TEENAGE SMOKERS, UNITED STATES, IN SELECTED YEARS, BY SEX



The authors of this work view the findings as a very encouraging sign and predict that, at some future date, there should be a decline in the United States of lung cancer death rates of cigarette smokers (see lung cancer Section II). [Auerbach, O., Hammond, E. C., Garfinkel, L. Changes in Bronchial Epithelium in Relationship to Cigarette Smoking, 1955-1960 vs. 1970-1977. The New England Journal of Medicine 300(8): 381-386, 1979.]

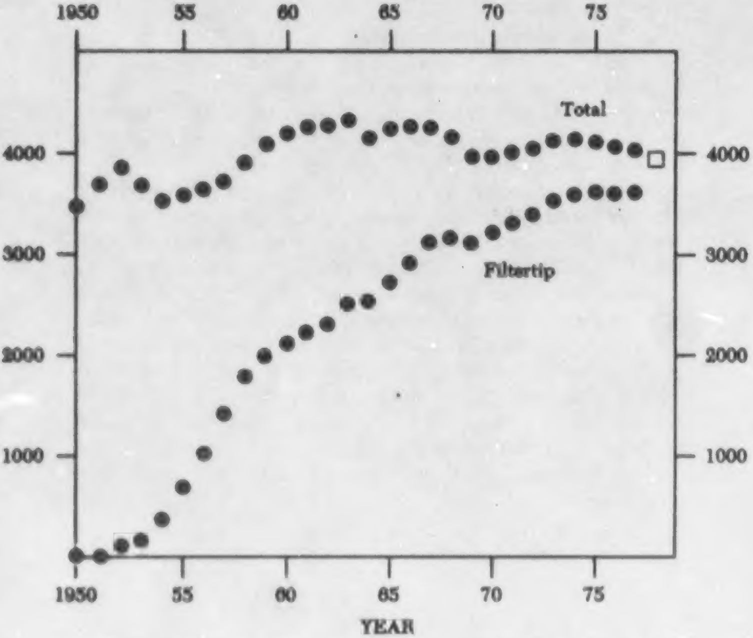
Smokers Smoking More

The actual number of smokers has declined more than the per capita consumption of cigarettes. Possible explanations: 1) Those who smoke least, are most apt to quit, leaving a higher increment of heavier smokers; 2) Those who continue smoking may be smoking more; 3) New smokers may be smoking more than long-term smokers [SC 1979, p. A-17]

Since this major change in smoking patterns has occurred coincidentally with a steady drop in the sales-weighted tar content of U.S. brands of cigarettes (including a drop in nicotine, which is usually in a ratio of 1:10 to tar), theories are that the remaining smokers may be smoking more cigarettes and inhaling more deeply in order to compensate for the lowered tar/nicotine content of their brands. However, an experiment designed to test these theses has indicated that smokers may increase their smoking temporarily when switching to a low T/N brand, but that they return to habitual levels within a short time. There is the further fact that the decline in tar/nicotine was more rapid between 1957 and 1965 than between 1966 and 1977. [SC 1979, pp. A 18-19-20]

Figure 5

ANNUAL CONSUMPTION OF CIGARETTES PER PERSON AGED 18 YEARS AND OVER. ANNUAL CONSUMPTION OF FILTERTIP CIGARETTES PER PERSON AGED 18 YEARS AND OVER, 1950-78.

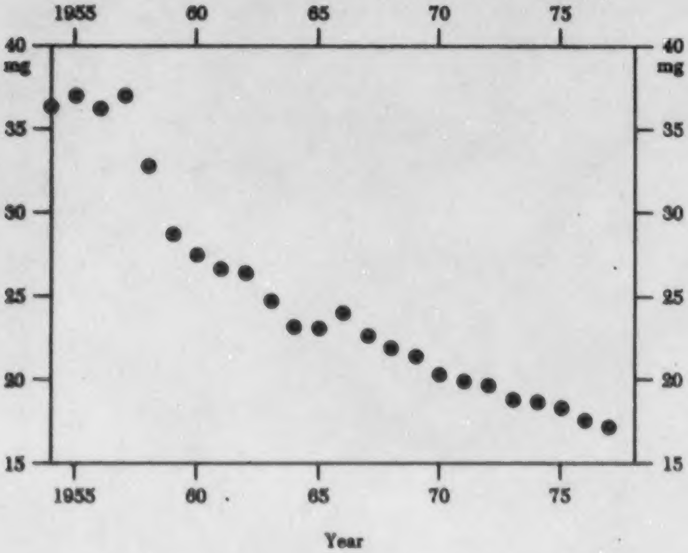


Source: Miller, R.H. (31-32), U.S. Department of Agriculture (47, 51).

☐ preliminary estimate

Table IX

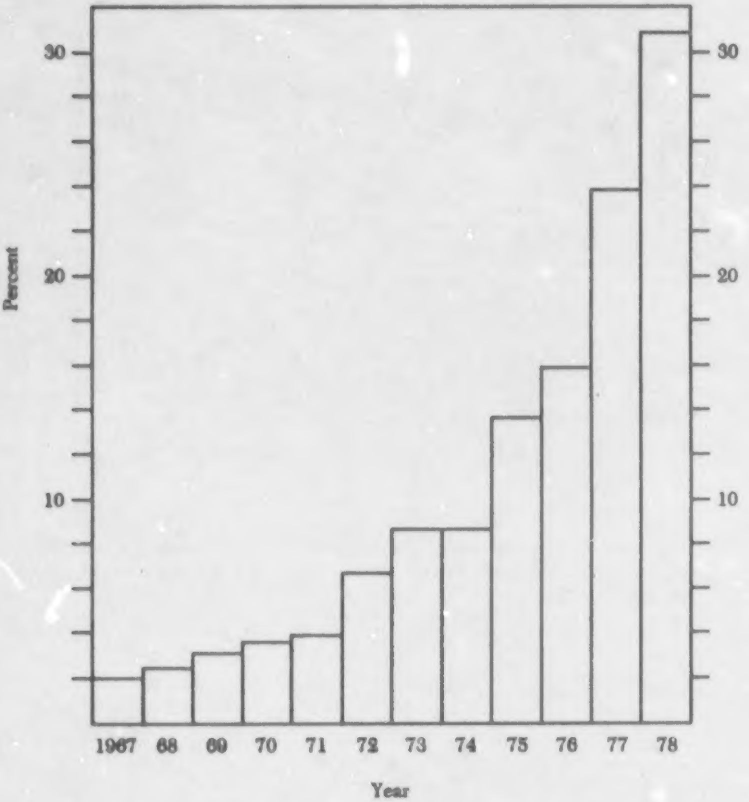
SALES WEIGHTED AVERAGE "TAR" PER CIGARETTE, 1954-1977



Source: Consumers Union (9), Hammond, E. C. (20), Maxwell, J. C. C. (27-30), Owen, T. B. (38), Philip Morris, Inc. (39a), U.S. Federal Trade Commission (67) Wakeham, H. (73), Weber, K. H. (76), Wynder, E. L. (78).

Table X

MARKET SHARE OF CIGARETTES WITH "TAR" 15 MG. OR LESS, 1967-1978 (1978 PROJECTED)



Source: Maxwell, J.C.C. (27-30), Standard and Poor's Corporation (44), U.S. Federal Trade Commission (67-69).

BIBLIOGRAPHY

Publications referred to repeatedly in this report are identified by a simple code, as follows:

[SG] Smoking and Health: Report of the Advisory Committee to the Surgeon General of the Public Health Service. U.S. Department of Health, Education and Welfare. Public Health Service Publication No. 1103. 1964

[SG 1967] The Health Consequences of Smoking. A Public Health Service Review: 1967 U.S. Department of Health, Education and Welfare. Public Health Service Publication No. 1696. 1968

[SG 1968] The Health Consequences of Smoking. 1968 Supplement to the 1967 Public Health Service Review. U.S. Department of Service Publication No. 1696. 1969

[SG 1969] The Health Consequences of Smoking. U.S. Department of Health, Education and Welfare. 1969 Supplement to Public Health Service Publication No. 1969-2. 1970

[SG 1971] The Health Consequences of Smoking—A Report of the Surgeon General: 1971 U.S. Department of Health, Education and Welfare. Public Health Service. DHEW Publication No. (HSM) 71-7513

[SG 1979] SMOKING AND HEALTH: a report of the Surgeon General, U.S. Department of Health, Education and Welfare. Public Health Service Office of the Assistant Secretary for Health, Office on Smoking and Health, DHEW Publication No. (PHS) 79-50066, U.S. Government Printing Office, Washington, D.C. 20402. Note: This document is paginated by chapters, rather than consecutively.

[Diehl] Tobacco and Your Health by Harold S. Diehl, M. A., M.D., Sc.D., Special Consultant for Research and Medical Affairs, American Cancer Society, Inc., McGraw-Hill Book Company, New York, 1969, 210 pp. including index plus xi pages of introduction.

[Royal] Smoking and Health Now—A New Report and Summary on "Smoking and Its Effects on Health" from the Royal College of Physicians of London—Pitman Medical and Scientific Publishing Co., Ltd., London, England 1971.

[WHO 1979] Controlling the Smoking Epidemic, Report of the WHO Expert Committee on Smoking Control, Technical Report Series 636 World Health Organization, Geneva 1979, 87 pp. (9 Sw. fr.)

APPENDIX

The results of seven prospective studies of large populations, totaling nearly seven million person-years, are frequently grouped in this and other reports. Great weight has been given to these studies made in three countries, because of their consistency.

These seven comprise all the large prospective smoking studies known. The first started in October, 1951; the latest, in October, 1959. Several are continuing.

In brief, the seven groups are as follows:

(1) British doctors, a questionnaire having been sent to all members of the medical profession in the United Kingdom [Doll and Hill, 1951]

(2) White American men in nine states. These men were enrolled by a large number of American Cancer Society volunteers, each of whom was asked to have the questionnaire filled in by 10 white men between the ages of 50 and 69. [Hammond and Horn]

(3) Holders of U.S. Government Life Insurance policies, available to persons who served in the armed forces between 1917 and 1940. [Dorn, continued by Kahn]

(4) Men aged 35 to 64 in nine occupations in California who were suspected of being subject to a higher than usual occupational risk of developing lung cancer. [Dunn, Linden and Breslow]

(5) California members of the American Legion and their wives. [Dunn, Buell and Breslow]

(6) Pensioners of the Canadian Department of Veterans Affairs, i.e., Veterans of World Wars I and II and the Korean War.

(7) American men and women in 25 states, enrolled by volunteer researchers of the American Cancer Society, each of whom was asked to enroll about 10 families containing at least one person over 45. [Hammond]

See Table XI, p. 77 for dates and numbers.

Table XI

OUTLINE OF PROSPECTIVE STUDIES OF SMOKING AND MORTALITY

Authors	Doll & Hill	Hammond & Horn	(Dorn) Kahn	Dunn, Linden, Breslow	Dunn, Buell, Breslow	Best, Josie, Walker	Hammond
Subjects	British Doctors	White men in 9 states	U. S. veterans	California occupational groups	California American Legion members	Canadian pensioners (veterans & dependents)	M&F in 25 States
Number of usable replies	34,000	188,000	248,000	67,000	69,868	78,000	1,057,000
Date of enrollment	Oct. 1951	Jan.-Mar. 1952	Jan. 1954 & Jan. 1957	Nov. 1953 and May 1957	May-Nov. 1957	Sept. 1955-July, 1956	Oct. 1959-Feb. 1960
Age range	35-75+	50-69	35-84	35-69	25-75+	35-75+	35-84
Months followed	120	44	100	about 48	36	72	70
No. of deaths	4,534	11,870	46,270	1,714	5,404	9,070	43,211
Person-years of exposure	269,000	668,000	1,312,000	222,000	336,571	383,000	3,764,571
Total number of subjects: 1,741,868—Total number of person-years of exposure: 6,955,142							

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Mr. **Waxman**. Thank you.
Dr. Daugherty.

STATEMENT OF ROBERT M. DAUGHERTY, JR., M.D., PH. D.

Dr. **Daugherty**. I am Dr. Bob Daugherty, dean of the school of medicine at the University of Nevada and chairman of the National Interagency Council on Smoking and Health.

It is in that latter capacity I appear before you today to urge support for H.R. 4957 and now H.R. 5653, also known as the Comprehensive Smoking Prevention Education Act. The National Interagency Council on Smoking and Health is a voluntary association of health education and youth leadership organizations having responsibility or concern with the problem of cigarette smoking on human health. The interagency council seeks to provide a cooperative and independent force to inform the public of the harmful effects of cigarette smoking.

Currently there are 30 national organizations that comprise the membership of the council. The Coalition on Smoking and Health which was announced here today will serve as the public policy arm of the National Interagency Council and will work closely with the three majority voluntary health organizations represented at this table with me today, American Cancer Society, American Heart Association, and the American Lung Association.

Last month, the Tobbacco Institute launched its biggest campaign ever, a campaign estimated to cost well in excess of $1 million includes nine insertions in national editions of Newsweek, People, Sports Illustrated, Time, TV Guide, and U.S. News & World Report. I am holding a copy of the campaign that now appears that most people have seen. Considering the conclusive evidence linking cigarette smoking to disease, we agree with the theme, weigh both sides before you take sides, which is why we urge in fact rotation of the warning labels that provide up-to-date facts on the hazards of cigarette smoking.

On the Office of Smoking and Health, maintaining the interface with the Federal sector is sequential. The Interagency Council is determined to play its role as coordinator in the private sector. However, the commitment of the Federal Government to perform its role has become a source of great concern.

As you know, the OMB has twice tried to line out the Office of Smoking and Health. Fortunately, Secretary Schweiker has been able to get the funding restored. Certainly the $2 to $3 million budget of that Office is miniscule compared to over $1 billion used to promote the sale of cigarettes. Yet this small amount provides the necessary funds to carry out essential governmental functions in smoking and health.

Requiring the rotation of six new warning statements on cigarette packages and advertisements we believe it is critical. Since the FTC has shown convincingly that the current warning is worn out, immediate action is needed to make this an effective medium to reach the public with information on the hazards of smoking.

The Tobacco Institute has referred to the rotational warning as a cumbersome system implying a burden to the industry. However, if you look at the ads of cigarettes this claim is ridiculous. Cigarette ad copy is changed and changed frequently. On the far wall are seven samples of a Marlboro ad collected from national magazines in one 4-week period during one month. Are we to believe changing a simple label is cumbersome and a burden?

Their argument that this represents increased regulation on an overregulated industry also seems to lack merit. It overlooks the fact that tobacco and tobacco products are exempt by agency determination or specifically by statute from those laws which were enacted by the Congress and in particular this subcommittee to protect the health and well-being of the American consumer.

Passage of H.R. 4957 would assure consumers receive the necessary information on the health hazards of cigarette smoking. No one is being denied the right to smoke. No one is being restrained on selling cigarettes or distributing cigarettes. We are not imposing restrictions.

The legislation simply seeks to provide the consumer with the right to know. Thank you.

[Dr. Daugherty's prepared statement follows:]

TESTIMONY

OF

ROBERT M. DAUGHERTY, JR., M.D., PH.D.

CHAIRMAN

NATIONAL INTERAGENCY COUNCIL

ON

SMOKING AND HEALTH

Mr. Chairman, Members of the Subcommittee on Health and Environment, I am Robert Daugherty, Jr., M.D., Ph.D., Dean of the School of Medicine, University of Nevada and the present Chairman of National Interagency Council on Smoking and Health (NICSH). It is in this latter capacity that I appear before you today.

The National Interagency Council on Smoking and Health is a voluntary association of health, education and youth leadership organizations having responsibility or concern with the problem of cigarette smoking on human health. It seeks to provide a cooperative and independent force to inform the public of the harmful effects of cigarette smoking. Thirty national organizations currently comprise the membership of the Council. A list of these organizations is attached to my statement.

The NICSH, through its member organizations and 80 local interagency councils, has and will continue its efforts to educate people about the dangers of cigarette smoking and assist these smokers who want to quit. The technical information and other service we receive from the federal sector facilitate the more efficient utilization of our limited resources. On the other hand, the Office on Smoking and Health, with its limited budget, must rely heavily on the prviate sector to carry the message to the public. This federal-private interface is largely responsible for the continuing downward trend in smoking among Americans.

While the prevalence of smoking is declining[1-2] we do not underestimate the difficulty of the task that lies ahead. The tobacco industry, with its vast resources is very good at waging campaigns designed to create diversion and doubt in the minds of the public. Since the 1978 public opinion survey conducted for the Tobacco Institute by the Roper Organization[3] recommended these and other tactics, such campaigns have proliferated in the media. Last month, the Tobacco Institute launched what Peter Sparker, Vice-President Public Information,[4] called "the biggest campuign we've ever done". The campaign will include nine insertions in national editions of Newsweek, People, Sports Illustrated, Time, TV Guide, and U.S. News and World Report during 1982. The cost of a campaign of this magnitude is estimated at well in excess of $1,000,000. Considering the conclusive evidence linking cigarette smoking to disease, a campaign with the theme "Weigh Both Sides Before You Take Sides" can only be designed to create confusion.

To counter the immense determination of the tobacco industry to keep Americans smoking, our limited resources must be effectively coordinated and the interface with the federal sector maintained. The NICSH is determined to play its role as coordinator in the private sector. However, the commitment of the federal government to perform its role has become a source of great concern. As you know, the Office of Management and Budget has twice tried to "line out" the Office on Smoking and Health (OSH). Fortunately, DHHS Secretary Schweiker has been able to get the funding restored. The $2-3 million budget of OSH is miniscule when compared to over $1 billion[5] used to promote the sale of cigarettes. Yet, it provides an essential function to the private organization that must get the job done.

H.R. 4957 would assure that OSH continue to provide this vital function. A secure existence for OSH with delineated functions and objectives, would also be a significant stimulant to the private sector.

The establishment of an Interagency Committee within OSH to coordinate all federal activities that relate to smoking is a very important provision of H.R. 4957. By requiring federal agencies to coordinate, as the private agencies now do, will further enhance the quality and efficiency of federal performance. Considering the dim prospect for increasing federal outlays in this area, efficiency is critical.

The provision of H.R. 4957 requiring the rotation of six new warning statements on cigarette packages and advertisements is immensely important. The FTC[4] has shown convincingly that the current warning is "worn out". Immediate action is needed to make this an effective medium to reach the public with information on the hazard of smoking. This requirement is something which the federal government can do, at no cost, to supplement private efforts. Its importance cannot be overemphasized since the broadcast[5] and print[6-8] are largely inaccessible for communicating information on the effects of smoking.

The Tobacco Institute[9] has referred to the rotational warning as a "cumbersome system", implying a burden to the industry. However, an observance of the copy of cigarette advertisements point out how ridiculous this claim is. Brown and Williamson's Barclay ad campaign used at least seven completely different or variations in the copy. This was rated one of the "top ten" campaigns for 1981.[10] In accordance with this provision in H.R. 4957, the same warning statement would have been used on all these variations. The point is that cigarette ad copy is changed and changed frequently to avoid "wear out". Requiring a label change once a year is indeed a simple matter.

The Tobacco Institute has also argued that this represents increased regulation on an over-regulated industry. This argument also lacks merit. It overlooks the fact that tobacco and tobacco products are either exempt by agency determination or specifically by statute from those laws which were enacted by the Congress and in particular this Subcommittee to protect the health and well being of the American consumer. The Food and Drug Administration has by agency determination ruled that tobacco and tobacco products are neither 'foods' nor 'drugs' to be regulated under the Food, Drug and Cosmetic Act. The Consumer Product Safety Act specifically exempts by statute tobacco and tobacco products from being defined as a "product" to be regulated under that Act. The Federal Hazardous Substances Act specifically exempts tobacco and tobacco products from being considered a "hazarous product" under that Act. Tobacco and tobacco products are also not regulated under the Toxic Substances Act.

So Mr. Chairman, and Members of the Subcommittee, although the Congress of the United States has declared cigarettes to be dangerous to ones health, tobacco and tobacco products have escaped being regulated under those Acts which were enacted by the Congress to specifically protect consumers from health and safety risks. While tobacco and tobacco products cannot be considered to be a food under the Food, Drug and Cosmetic Act, I find it somewhat ironic that it continues to be exported as a food under the Food for Peace program.

The argument that the provision of more disease specific warning labels is "excessively regulatory" and "paternalistic" is ludicrous. To the contrary, this legislation represents a minimum of government regulation especially when considered against the exception to the federal laws I have just noted.

H.R. 4957 would give the consumer the necessary information on the specific health hazards of cigarette smoking so that the consumer would be able to make an informed choice as to whether or not he or she smoked. No one is being denied the right to smoke under this legislation nor are any restraints on sales or distribution being imposed on the cigarette manufacturing industry. This legislation seeks only to provide consumers the right to know all of the health hazards of cigarette smoking.

Mr. Chairman and Members of this Subcommittee, the National Interagency Council on Smoking and Health stand ready to do their parts in working closely with the Congress and the Federal government in a stronger partnership to ensure that information on the hazards of smoking is reaching Americans everywhere.

Thank you.

REFERENCES

1. The Gallup Poll, The Gallup Report: Gallup Smoking Audit Report N. 190, Princeton, N.J., July, 1981.

2. Office on Smoking and Health, Highlights From the 1980 Supplement to the National Health Interview Survey, May, 1981.

3. The Roper Organization, A Study of Public Attitudes Toward Cigarette Smoking and the Tobacco Industry in 1978, Volume I, May 1978.

4. Advertising Age, "Tobacco Group Drive Set", Advertising Age, page 80, January 18, 1982.

5. Business Week, "How Cigarette Makers Aim To Fire Up Sales", Business Week pp 65-70; December 7, 1981.

6. Myers, M.L.; Iscoe C.; Jennings C.; Lenox, W.; Minsky, E.; and Sacks, A.: Staff Report on the Cigarette Advertising Investigation, Federal Trade Commission, May, 1981.

7. Whelan, E.; Sheridan, M.; Meister, K.; and Mosher, B. "Analysis of Coverage of Tobacco Hazards in Women's Magazines." Journal of Public Health Policy. 2(1):28-35. March, 1981.

8. Smith, R.C.; "The Magazines' Smoking Habit" Columbia Journalism Review, 16(5):29-31, January-February, 1978.

9. The Tobacco Institute. Comments of the Tobacco Institute on the FTC Staff Report on Cigarette Advertising Investigation. Washington, D.C. 1981.

10. Tyler, William D.; "Tyler's Ten For the Year" Advertising Age p. 52-54, January 18, 1982.

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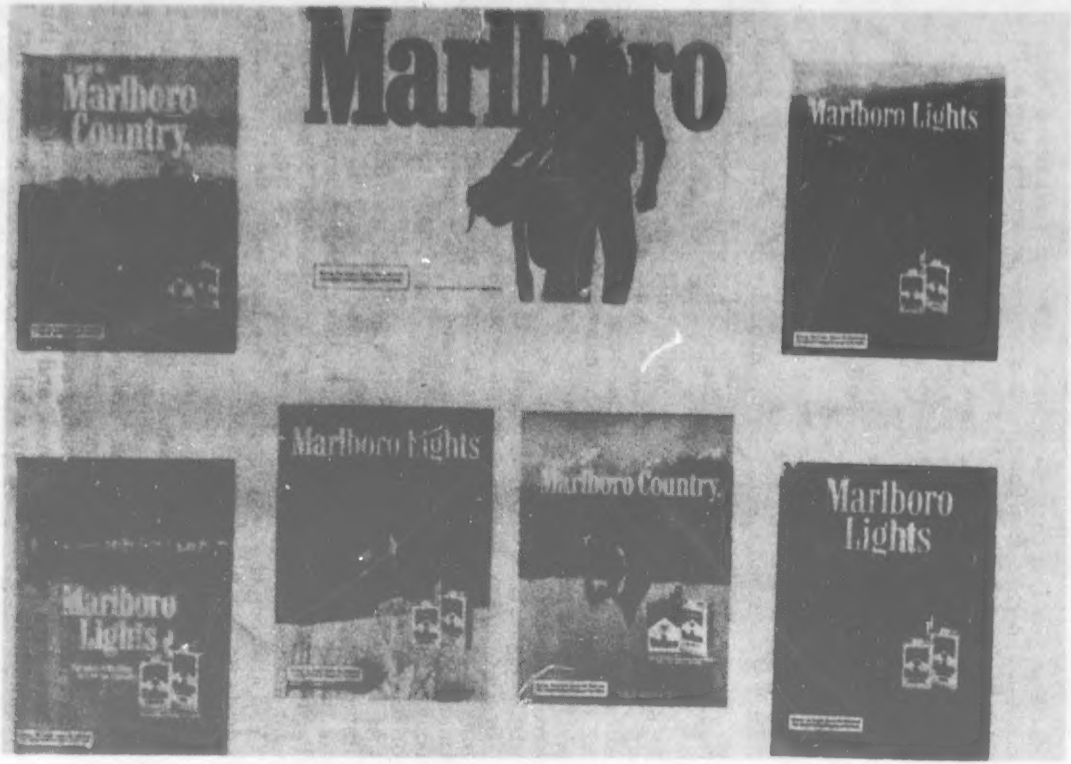
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Mr. **Waxman**. Thank you very much.

Each of you has come here with your own professional experience and expertise. But you are also here representing three of the major health organizations that are concerned about smoking, the Heart Association, the Lung Association, and the Cancer Society. I want first of all to commend you for establishing this coalition organized to try to work together in this one area of tremendous public health significance. I hope this will be the beginning of coalition activities in other areas as well.

Each of you represents a nonprofit organization receiving voluntary contributions from the public. As I understand the purposes of your organizations, you have other priorities in addition to trying to bring public attention to the problems of smoking.

Parts of your budgets, maybe the majority of the money collected by your organization, goes to funding activities such as research. If we placed the full burden on voluntary nonprofit organizations to fund programs for people to have contrary information on what is being sent to them through very skilled and expensive industry advertising campaigns, aren't we asking nonprofit, voluntary organizations to divert scarce resources from research and other activities, and isn't this going to be an impossible task because you can never counter the millions of dollars of advertising spent by the tobacco industry?

Dr. Daugherty, I would address that to you, if I might.

Dr. **Daugherty**. I agree with what you have said, Mr. Waxman. I think most of my effort with one of these organizations is with the American Heart Association. I guess one of the reasons we are here today is that cigarette smoking is one of the major risk factors for coronary artery disease.

As Dr. Oates pointed out, it is the leading cause of death in the United State today and cigarette smoking, if we could get people to stop, could prevent that. There are lots of things involved by the Heart Association in terms of research on hypertension, cardiovascular disease including stroke, and we need to continue to do that.

You are correct in saying that if we had to devote all of our resources to this, all of our resources wouldn't even touch what the industry has available to it in the course of a year.

Mr. **Waxman**. I find it ironic that some of our colleagues with us today sent a letter to Members of the House of Representatives urging them not to join in support of our bill. Mr. Rogers referred to the concern he has that we are going to divert attention from all the environmental and occupational factors which may have human health effects by focusing exclusively on smoking.

Three days out of this week and the next couple of weeks this subcommittee is marking up a bill to change the Clean Air Act. I expect the result, as I see things going in our subcommittee, will be that our committee is going to present a bill to the Congress that will dramatically weaken the protections of the Clean Air Act which has been set up to protect public health.

Once we have this bill out, I don't think it's going to become law, I don't think it will pass. But if the Congress followed the recommendations of some Members who are offering this legislation, we are going to weaken efforts to try to clean up the air. Shouldn't we then put in even more effort to try to stop cigarette smoking?

Dr. Cahan maybe I could address this to you. Are we talking about things that can be segregated, considered separately, or is there a synergistic effect of air pollution, cigarette smoking, and other environmental exposures?

Dr. **Cahan**. Well, an ideal arrangement, would be to take the major carcinogenic materials that we breathe, imbibe and out of our culture. But in a realistic sense, I think that it may be difficult to accomplish both and you therefore may not accomplish either. I don't know how these legislative mechanisms work. There is no question, however, in discussing the environment, cancer specialists, eschew any and all things which cause cancer.

We have a strong feeling that the personal environment, namely, smoking, is the preponderant cause of our particular interest, which is cancer. Therefore, I think the concentration would be in that direction. I think there are many lives to be saved in both. But that to my mind, would have prime interest.

Mr. **Waxman**. There is a combined impact? There is a synergistic impact to these exposures?

Dr. **Cahan**. Yes, the synergism, is called cocarcinogenicity. There is no question that one plus one equals three, not two. For example, radiation plus some other carcinogen painted on animal skin would cause cancer more predictably than one alone. An asbestos factory worker who smokes, has a marked increase in his chance of developing cancer of the lung than if the asbestos worker does not smoke.

Mr. **Waxman**. I guess the point I am drawing out is that we should not divert our efforts in any area, and we should not expect that one area alone is worthy of our attention as representatives in Government today. The tobacco industry frequently characterizes the reports and statements of the U.S. Surgeon General as merely one man's opinion. It suggests true researchers as opposed to practicing physicians are not quite as confident as you gentlemen about the health effects of smoking.

How would you respond to that comment, Dr. Oates?

Dr. **Oates**. The Heart Association has examined these issues extremely carefully and repeatedly with expert groups of scientists from a variety of fields and there is a unanimous opinion in these examinations that there is no question regarding the data.

Mr. **Waxman**. Do you find researchers as well as practicing physicians have come to the same conclusion?

Dr. **Oates**. These are indeed the researchers who have come to the conclusion that cigarette smoking is a major cause of cardiovascular diseases.

Mr. **Waxman**. Among physicians that you have come in contact with, how much of a differing opinion do you find? Is this a widespread consensus, or is this one where maybe there is only a slight majority of views that cigarette smoking is harmful?

Dr. Daugherty.

Dr. **Daugherty**. I think there is widespread consensus. As a matter of fact physicians is the one group that has the highest percentage of people who stop smoking. I think that alone is evidence that the practicing physician believes the data that has come from the researchers, which incidentally the Surgeon General is one person, but he has put together the data from many, many investigators. It is not one man's opinion. It is in fact facts compiled by one man to present to the public.

Mr. WAXMAN. And then let me just ask a couple of questions because I think it is important to bring these points out. Dr. Ayres, can a smoker reduce the risk to health by quitting, even after years of heavy smoking?

Dr. AYRES. That evidence, that quitting smoking reduces the incidence of disease, is part of the evidence that points to the causality of cigarettes. One example, a large number of physicians in Great Britain were followed for a number of years. Over half of them stopped smoking, and the reduction of deaths from chronic lung disease was 34 percent, compared to only 4 percent in the general population.

So there is a very substantial body of literature developing this point. There are other studies in American populations that show that after a number of years of abstaining from smoking, the death rates from lung disease and heart disease are substantially reduced. That is very important and even people with symptomatic heart disease or symptomatic emphysema can be improved if they stop smoking.

May I talk to that?

Mr. WAXMAN. Yes, Dr. Cahan.

Dr. CAHAN. One of the sophistries with which smokers amuse themselves frequently is that it is "too late to stop." This has no meaning in a scientific sense. We do not know where that point of no return is, where that cell beaten on suddenly waves the white flag of surrender and says all right, if you insist, I am going to become cancerous.

There is no question that the sooner one stops, the better the chance one will not get to this point of no return. This is a message we should convey to people who smoke for any length of time. There is unquestionably a renewal, a healing, a recovery of the mucus membranes of the tracheal bronchial tree once the irritation factor has stopped.

This renewal can return in time almost to its original pristine state, after a period of 10 or 15 years, and to be equated with those who never smoked.

Mr. WAXMAN. What role does carbon monoxide in cigarettes play in the risk of heart disease and pregnancy outcome?

Are carbon monoxide levels lower in low-tar-nicotine citarettes and is there a safe or safer cigarette?

Dr. AYRES. The carbon monoxide issue is an interesting one, it is interesting it was not mentioned in earlier reports. It is only in recent years that it has been recognized that when carbon monoxide combines with hemoglobin that there is a deprivation of the oxygen available to the heart muscle.

There is excellent evidence that smoking cigarettes decreases the exercise tolerance of patients with coronary artery disease. One of the problems with the methods of reducing tar and nicotine is that they do not reduce the gases in cigarette smoke and carbon monoxide is one of the gases of great concern. Incidentally, carbon monoxide is not a required labeling issue and there are many of us who believe that the carbon monoxide content should also be on the cigarette package.

Mr. **Waxman**. Why would that information be valuable to someone?

Dr. **Ayres**. If smokers wished to select what they believed to be a healthful cigarette and we incidentally do not believe there are any healthful cigarettes, they need to have a complete listing of the dangerous elements so they can make an informed choice.

Dr. **Oates**. The evidence does not show low tar and nicotine cigarettes provide any protection from the risk of heart attacks.

Mr. **Waxman**. So a low-tar/low-nicotine cigarette may not have a low danger level for the smoker if he thinks he is going to have a safer cigarette. Is that correct?

Dr. **Oates**. Furthermore, there is a well-documented compensation with the low-tar/low-nicotine cigarettes in which smokers will smoke more and inhale more deeply to gain higher levels of nicotine and other substances in the smoke.

Mr. **Waxman**. I am going to call on my colleagues to engage in some questions that they might have for you. But I want to ask a question and I am asking it rhetorically.

This Government spends money on vaccinating children. We had some hearings indicating that some of the cuts in the vaccination program are poorly thought out and endangering many children with the possibility of getting some dreaded diseases. But I do not know that when we encourage children to come in for vaccinations, that that is any more brainwashing than it would be to try to inform people that smoking cigarettes is going to be hazardous to their health, dangerous to their well-being.

And I think in both cases the Government has a responsiblity to try to educate the public as to the dangers of why they should avoid smoking on the one hand, and why they ought to get vaccinated on the other.

Mr. Bliley.

Mr. **Bliley**. Thank you, Mr. Chairman.

Thank you, gentlemen, for appearing today.

Dr. Ayres, does the American Lung Association have any research results that positively show that extensive labeling will decrease the incidence of smoking in the United States?

Dr. **Ayres**. The American Lung Association supports research among the scientific community, but is not a research institution of itself. I do not believe there is very much good marketing information about the impact of labeling. I think there is a strongly held belief that it is an important aspect of our total fabric in the attempt to persuade people to stop or to not start.

Mr. **Bliley**. Thank you. Does anyone else want to comment?

Dr. **Oates**. I think one could view the labeling not in terms of proved marketing effectiveness, but in terms of the right to know when someone purchases a lethal product.

Dr. **Cahan**. Mr. Bliley, in light of the fact that cigarette smoking has increased in the face of the current label suggests it is indeed ineffectual, and is all the more reason, as our advertising brethren would say to stop that particular campaign and get a better one. I think the daily reminders that a good campaign might produce are very important, as I said before, as a persistent repeated reminder.

There are those warnings that come as a block-sized headline such as the Surgeon General's report. But daily reminders I have found in my attempts to stop people are just as important. The nagging wife for the husband who persists in smoking; the water dripping on stone. All these things, finally do add up. This, would also be a way of approaching it and estimating its value.

Mr. **Bliley**. Well, Dr. Cahan, since you have said that you do not know whether it would work or not, that the changing of the labels or whatnot would have an effect, should we not await the research on this before we require it? In other words, should we not get the evidence in before we require a procedure?

Dr. **Cahan**. I think that these are very hard things to estimate before you really get into the experiment, if you want to use that. We cannot prejudge it of course. On the other hand, I do think that the idea behind it has a parallel, in an effective campaign used on television, where so many children stopped smoking when they viewed antismoking television commercials which have largely been discontinued.

That is the only parallel I can judge as far as that is concerned. But in all probability, multiple labels will serve up a multiplicity of personal warnings to fit some particular individual; for example, the pregnant woman looking at that particular label. It will do a great deal more than the pallid one that we have at the present time.

As somebody has said, it has become a part of our background already, like a hydrant in front of the house or a picture you no longer see on the wall. The idea of changing them is interesting and people will be more likely to read them.

Dr. **Ayres**. Mr. Bliley, we just do not have the resources that the tobacco industry does to perform these marketing studies. We know the tobacco industry invests hundreds of millions of dollars with each campaign to see if a particular message is effective. We have to rely basically on some predictions that it may be effective.

I happen to believe that it would be ineffective and probably an inappropriate use of private and Federal funds to invest a billion dollars to see if the labels worked. It would be more appropriate to follow the judgment of experts and attempt the labeling approach and then look at cigarette sales down the road and see if it is effective.

Mr. **Bliley**. You are certainly entitled to your opinion.

Dr. Oates, to the best of your knowledge has the American Heart Association performed any research evaluating the effects of rotating warning labels on human behavior with regard to smoking?

Dr. **Oates**. We have not evaluated the specific aspects of warning labels, but we are quite familiar with the data that relates to the level of knowledge that these warning labels would attempt to correct.

For example, among people who currently are smokers, only 58 percent know that smoking is a cause of many heart attacks. It is our feeling with respect to the label that the person who purchases these products should know in specific what are the risks. And this right to know is irrespective of marketing surveys in terms of effects on behavior.

We think that the personalized aspect of the messages as indicated will speak more specifically to the people whose families have heart disease, women who are on birth control pills, and people will become familiar with the multiplicity of the dreadful effects that occur from the cigarettes.

We think there is a right to—knowledge of these things and that it is something of great value.

Mr. **Bliley**. Since you gentlemen are in the health field and are concerned, genuinely so and rightfully so with the health of the Nation, as we are as members of this subcommittee and members of this Congress, we already have legislation that requires warning on cigarettes, with which you may agree or may not agree.

But there are other products that are for sale. Alcohol specifically comes to mind. That certainly has health hazards associated with it. Yet we do not require warnings on that advertising or restrictions. In the limited time and resources we have in the committee, should we not be looking at this area before we go to increase warning labels here, when the respected Gallop Poll says over 90 percent of the people in the country believe already that smoking may be harmful to their health?

Dr. **Ayres**. Well, we are in a crisis situation, sir. I think that the magnitude of the smoking related deaths and illness so exceeds that of many of the other issues that have been raised that we should begin there. Now I personally have no problem with a similar warning on alcohol. But many of the others, Mr. Rogers mentioned power mowers, certainly that is significant. But I think it is a little unrealistic to take the number of fingers and the deaths from power mowers and compare that with the number of deaths from cigarette smoking.

So it is really a matter of beginning where our efforts will be most important.

Mr. **Bliley**. Do you have statistics on other products, any of you, as to what effects it has on health?

Dr. **Oates**. I think as physicians we are very familiar with the multiplicity of factors that have effects on health. And all of us are here because we feel that this one particular factor represents an epidemic of major proportions that is threatening American health and it is a particularly dreadful epidemic because it is inflicted initially, most often, on children who enter into a difficult-to-break habit without adequate information.

Mr. **Bliley**. But Doctor, is teenage alcoholism not reaching epidemic proportions in this country?

Dr. **Oates**. Exactly. But I do not think our choice here is to compare things that are both terribly bad. I think that we are seeing deaths due to cigarette smoking that exceed those in most major wars of this world.

Mr. **Waxman**. Will my colleague yield at that point? I should point out just for the record that to the credit of the alcohol industry they do spend money to discourage children from drinking. They talk about drinking alcoholic beverages as something for adults only. They are also a regulated industry.

The cigarette industry is not regulated. They do not put money into discouraging young people from smoking. In fact, they do the exact opposite. They put money into advertising campaigns to encourage young people to take it up.

Dr. **Oates**. In these times of fiscal constraints it is important that we are wasting billions of dollars of the health budget to care for the morbidity and mortality of the use of tobacco.

Mr. **Bliley**. No further questions, Mr. Chairman.

Mr. **Waxman**. Thank you, Mr. Bliley. Mr. Rogers.

Mr. **Rogers**. Thank you, Mr. Chairman.

I served as local chairman of the American Cancer Society and American Heart Association campaigns to raise funds from volunteers, fund the programs that you so eloquently promote in your different organization.

And I was honored and proud to do so, and still am.

And it is for that reason that I think the organization that you represent can best sell the American people on the hazards of smoking. And not the U.S. Government. It is my opinion that the Government can best do the research and support the scientific research, and to then let and help in any way possible the privately funded voluntary organization do the selling, the propagandizing and, if you will, the brainwashing, because it has the army of people and the hundreds of people we involved in the campaign to raise those funds.

It has the army of people willing and able to take on the task if properly motivated and armed and equipped with the proper material. I am told that the American Lung Association spends less than 5 percent of its total budget, 5 percent or less, in funding research. I frankly think that is a little bit embarrassing for the folks that I ask money out of back home for that program. I do not think they are aware of that.

I was not either. Frankly, the organization and the Heart Association and the others I think are well equipped to sell the concepts that you have described here today. But President Reagan and this administration and this Government intent upon reducing the cost of the size of the Government that we have, and failure to do so, could possibly render us in very severe economic problems. So the president and many others seem to feel that private organization, voluntary organization such as your own should be given more of the responsibility for what many in the last 5 or 6 years perceived to be public service, governmental programs. Would it not be more appropriate for the Central Government to fund the scientific research on smoking and the hazards, and then to let your organization and others take that scientific research and do with it what you do best, and not establish another huge bureaucracy up here devoted to telling people not to smoke?

Would that not be the best route to take, given the circumstances we are in? Dr. Ayres.

Dr. **Ayres**. Well, I suppose I should first respond to the issue of the 5 percent on research. And I suspect I know where those figures came from. We feel at the American Lung Association that we have accomplished much of our goal because we have been attacked so frequently by the tobacco industry, and we give ourselves an A on the report card for that.

We support research, but we also use our budget for the support of public education and professional education, and we have a large number of affiliations, as you know, in many States throughout the United States, all the States. The issue about how much to put into biomedical research and how much to put in behavioral research is a very significant issue. My own view is that we have done about as much biomedical research as we need to do. It is the tobacco industry that keeps saying do more research. They would like us to find out something that we have not already found.

So I think we have done enough biomedical research, not quite enough, we now need to put those dollars into behavioral research, into helping physicians and others understand how we can promote healthful habits.

Mr. **Rogers**. If I may interrupt you, why do you not put more of those moneys into telling the American people not to smoke? Why do you not have advertisements such as Marlboro over there telling people not to smoke?

Dr. **Ayres**. Well, you know the budget of your Lung Association as well as ours. When you think of that $1 billion figure, I do not think there are enough Christmas seals that will ever be printed that can equal that figure. It is the unequal balance that concerns us. And I share your concerns about Government.

I think we all do. But at some point, you gentlemen have to decide where Government should take a stand and where it should not. And we believe that an epidemic that kills as many Americans as cigarettes do is very worthy of a Federal and coordinated approach.

Dr. **Oates**. We are particularly interested in this issue of how much we can do in the Heart Association for informing the public about smoking. We find that we are in a very frustrating and boxed-in position in terms of being able to be effective in this area.

There have been some estimates of the cost of a 30-second spot to make one single message on television. It is in the neighborhood of $80,000. That is about equivalent to the annual budget of the Smoking Subcommittee of the Heart Association at the moment.

Such a public service message, by our past experience, is likely to be shown at about 2 a.m. in a not very interesting programing format. This is one of the reasons why the Heart Association finds that it needs to work together with the Federal Government. We would not ask that the Federal Government assume all of this responsibility, but feel that with a small amount of money in the Office of Smoking and Health that this could bring together forces that could accomplish this job in a way that they singly could not.

Perhaps the best example of this is in the area of hypertension which is another risk factor for cardiovascular disease, where the National Heart, Lung, and Blood Institute has been exceedingly effective working with the private agencies to bring about a remarkable change in the treatment of hypertension, and we are very gratified that the incidence of stroke is falling remarkably.

So I think this is an area where the Federal Government with a small effort working with private groups has been exceedingly effective and that is a model we could follow.

Dr. **Cahan**. I am not an economist but I do not think it is asking too much to project that the problems of voluntary organization are going to be increased as far as fundraising is concerned in light of our present economic situation, and that this will become a deepening one.

What with the estate tax differences and what with diminished incomes, voluntary agencies are going to suffer along with others. So I think at this particular time it would be appropriate for the Government to help.

Mr. ROGERS. Yield back my time, Mr. Chairman.

Mr. WAXMAN. Thank you very much, Mr. Rogers.

Gentlemen, thank you very much for your testimony today. It has been very helpful to us. We appreciate your taking the time to be with us.

The introduction of our next witness is a special pleasure. From 1961 to 1965, Dr. Luther Terry played an integral role in identifying and substantiating that cigarette smoking is a major human health risk. We have learned much in the 18 years since Dr. Terry sounded the alarm. It is appropriate today that we solicit the views of the man who made the position of Surgeon General synonymous with smoking prevention.

STATEMENT OF LUTHER TERRY, M.D., PHILADELPHIA, PA.

Dr. TERRY. Thank you, Mr. Chairman, members of the committee.

I appreciate your inviting me here to speak on this very important subject. I recognized this as an important subject, dating back to 1964 when I was Surgeon General. Prior to that I was successful in appointing a very fine scientific advisory committee to review the subject, and as a result, on January 11, 1964, we published the results of that committee's study, of over almost 2 years. And it has been a hallmark in the field of the recognition of tobacco smoke in relation to disease.

I am very gratified that in these 18 years since that report was released, that none of the significant findings and conclusions of that committee have been repudiated.

As a matter of fact, the main thing that has happened over more recent times is that there has been further substantiation of many of those facts that were brought out in the original Advisory Committee's report, and we have extended our information with regard to smoking and health into other areas that were not known; for instance, the effect on pregnancy, women, and birth control pills and even some more substantial scientific information on the subject of heart disease, and particularly coronary disease.

So that I am very gratified that this information has been further substantiated and that it is readily available to the public and is strongly endorsed by the medical profession.

I am also indebted to you, Mr. Waxman, for having so succinctly in the November 12, 1981, issue of the Congressional Record, to have capsulized the information on the subject to the extent of bringing out the importance of the subject.

At the risk of being redundant, I will have to say again what several of our other witnesses have said, that smoking is the most preventable cause of disability and death in the United States today. What more challenging statement could be made in terms of responsibility of the American people to do something about?

At this stage I would like to say just a word about Secretary Califano because I have such great admiration for him and for the stand that he took.

Prior to his creating the Office on Smoking and Health, we had a clearinghouse which was created in the Public Health Service, which served in the same general direction. The fact that Mr. Califano raised the status of this segment in terms of its location and importance and staffing and funds I think was a great lift for us.

I have been greatly concerned by the rumors that the Office of Management and Budget wishes to cut down or even cut out the funds for this, and I feel that we should be appreciative, at least to a significant degree, to Secretary Schweiker in keeping this program alive.

Now, if I may, I would like to speak specifically about a few of the legislative proposals which are before you. I think the first one that I would like to take up is the question of the statutory creation of an Office on Smoking and Health.

As you know, at the present time this unit is an administrative creation of the Secretary and could be wiped out with the sweep of a pen. At the same time, this subject and this organization is so important that the Congress should manifest its interest in this to the degree of creating a statutory segment in our Government; namely, the Office on Smoking and Health.

I would also like to emphasize the fact that I think the amount of money necessary for this program has not been adequately met in any respect. When you think that the Clearinghouse, the predecessor of the Office on Smoking and Health had a budget of about $3 million back in 1971-72 and today we expect that Office to operate on a third of the number of employees and about $2 million.

Imagine what $3 million was in 1971–72 in comparison to $2 million now, after 10 years of inflation.

Frankly, I would be delighted if the Congress would authorize an appropriation level for the Office on Smoking and Health, and I would personally recommend that a level of $10 million a year over the next few years would be proper.

Furthermore, I would hope that the Appropriations Committees would respond to such an authorization and give us the support that we need for the program.

In relation to other aspects, I think the definition of the responsibilities of the Office on Smoking and Health which are included in the bills is particularly important. One thing I would like to especially emphasize is the requirement of an annual report of the Public Health Service and the Department of Health and Human Services to the Congress on the scientific aspects on smoking and health.

I well recall back in 1965, when the first Smoking and Health Act was passed, that one of the authorizations and requirements and I think it has been tremendously important.

I am not sure that we would have accumulated the amount of information or gotten the amount of support that we needed in the Public Health Service to carry on this program had it not been required by the Congress that the Department submit an annual report.

I think this issue is too important to allow it to slip by and that this should be continued.

There is a question of our needing more research in the field of smoking and health. The tobacco industry over the years has repeatedly said "we need more research, the facts are not all in."

I think most of us in the scientific field know that this is completely irresponsible, that there are enough facts to point in the direction we need to go. I would also say, yes, there is justification in having more research. The research, however, should be primarily directed, now that we know smoking affects these certain organs and causes certain disease conditions, so that we can learn more about exactly how it does it, and we should know.

However, I think probably the most important thing and area in which we need research in smoking and health today is in relation to behavioral studies, to understand why people continue smoking. In other words, we need funds for this type of research.

I also applaud the provision in the bill for requiring a health warning on cigarettes that are exported for consumption. For several years I served as the chief of our delegation to the World Health Organization. More recently, I served on an advisory committee to the World Health Organization on the subject.

Frankly, I have been embarrassed to think that we would require such a health warning on cigarettes for consumption by our own nationals, and yet not require it for other countries.

It is true that in most of the more advanced countries they now by their own laws require health warnings. But one of the areas I think of a great concern to many of us is tremendous movement on the part of the tobacco industry to develop, stimulate and expand the market in the developing, or the Third World countries.

Those countries, in general, do not have the scientific excellence or efficiency to evaluate the problems. Consequently, I fear that we are feeding epidemics of death to some of our developing foreign neighbors, where we should be helping with food and other things in their normal development.

I would like to comment just briefly about the question of leaving the Federal Government out of this and letting volunteer organizations and local authorities take care of it.

I think most of us realize that this is really not a reasonable approach. You know very well that if as of this week the Federal Government dropped its requirement on the health warning on advertising and on packages, they would be discontinued, and none of our municipalities or even States could be effective in requiring that sort of requirement.

So, there are certain things like that, which the Federal Government must do in stimulating and assisting, but at the same time, I realize that many of the problems in relation to smoking have a very important aspect of local action, both volunteer and local government action.

I think one of the best examples in this respect is what we call involuntary smoking, or the secondary effect of smoking on a nonsmoker. In that regard, I think this is not an area in which the Federal Government can act very effectively, except in relation to Federal buildings and installations.

I think that we have seen over the country the actions that have been taken by local governments, and that local organizations has been very active in this regard. It is something which they can do.

I think the Congress, in it is viewing the problem as it relates to many aspects of smoking and health, has to carefully decide which of those things the Federal Government alone can do, or predominantly can do, and which they cannot do as well and therefore should not take action in that direction.

I realize there are lots of aspects of the problem, Mr. Chairman and members, that I have not touched on. I think my printed report to you goes into more detail, but at the same time I did want to touch on some of those matters which I felt were of greatest importance.

Thank you, sir.

[Dr. Terry's prepared statement follows:]

Statement of Dr. Luther L. Terry
Former Surgeon General, U.S. Public Health Service
Before the Subcommittee on Health and Environment on
HR 4957, "Smoking Prevention Education Act of 1981"
March 5, 1982

Mr. Chairman and Members of the Committee:

I wish to express my appreciation to Chairman Waxman for his invitation to appear before this Subcommittee on the important issue of smoking and health.

As most of you recall, I was the Surgeon General who issued the Report of the Surgeon General's Advisory Committee on Smoking and Health on January 11, 1964. Since that time I have continued my professional interest and activities on the subject for I feel that it is one of our major health problems. The tragic fact is that this damage to the health of our citizens continues and yet it could be prevented if we were able to convince people not to smoke.

I am pleased to report that none of the conclusions of the Advisory Committee have been repudiated in these 18 years since the Report was issued. The only changes which have occurred are that many of the observations have been extended and new scientific evidence has been added to show additional areas of health damage produced by tobacco smoking. A recent clear example is the current Surgeon General's Report, The Health Consequences of Smoking: Cancer 1982 which was released on February 22, 1982. In this Report the Surgeon General has reaffirmed our existing knowledge of the causative relationship between smoking and certain types of cancer. It has gone futher in presenting evidence not only in relation to cancer of the lung, the oral cavity, the larynx, and the esophagus, but to cancer of other locations such as the bladder and kidney, the pancreas, the stomach and of the uterine cervix. The relationship of smoking and cancer is beyond scientific dispute.

In addition, over recent years the importance of smoking in cardiovascular disease, especially coronary heart disease, in pregnancy, in chronic bronchitis and emphysema and general longevity has been established beyond any question of scientific doubt.

The tobacco industry since the first evidence of the health damaging effects of smoking, has continued to maintain that the evidence is not clear and that we need more scientific data. Gentlemen, I say to you that the evidence today is so conclusive that I do not understand how anyone could doubt its authenticity. Therefore, the question before this Committee and the American public is not whether there is evidence of the dangers of smoking, but rather, what can we do about this major health problem? As I understand the question before us today is what can the Congress do in recognizing this hazard and assist our responsible health and community leaders in preventing this major health catastrophe?

Smoking has been clearly shown to be the most preventable cause of disability and death in the United States today. The price we pay as individuals, and as a society, is so massive and so important that our national and local leaders must lend every effort to avoid this tragedy. It is my conviction that the Congress has a responsibility to see that every effort is made to get this message across. It is a life or death issue!

At this point I must express my admiration for Secretary Joseph Califano and his strong stand on this issue. He not only recognized and acted on this subject, as he did by the establishment of an Office on Smoking and Health in the Department, but he spoke out strongly and frequently on the issue. This may have been an important aspect of his removal as Secretary, but this event was tragic only for the American public and not to Mr. Califano. His position and reputation on this issue will stand the test of time and only represents the ambivalence of our political leaders to face-up to an issue involving such massive economic and monetary influences. It is a sad commentary but nevertheless true.

In addition to my comments about Secretary Califano, I must comment on more recent events. I understand that the Office of Budget and Management recommended an abolition of the funds for the Office on Smoking and Health in an effort to decrease Federal expenditures. I further understand that only the personal insistence of Secretary Schweiker resulted in a continuation of the support for this valuable program. Though the present support for the Office on Smoking and Health is far from adequate, I must applaud Mr. Schweiker for keeping this program alive.

If our political leaders could recognize all of the aspects of smoking and health - the issue would be clear. The cost that the American public is paying is massive. When one considers time lost from work, acute and long-term hospital care and physician charges - it far outweighs the returns for tobacco growers and manufacturers, and taxes derived from tobacco products. These figures are overwhelming and when coupled with the suffering, the disability and deaths due to smoking, it represents the modern American tragedy.

I shall not attempt to review the scientific evidence on the subject since that will have been presented by the Office on Smoking and Health, the Surgeon General and other expert witnesses. As a matter of fact, your Chairman has well related the seriousness of the problem in his remarks in the Congressional Record on November 12, 1981.

I would like to comment about the report of the Federal Trade Commission and HR 4957.

1) I strongly support the provision in HR 4957 for the statutory establishment of an Office on Smoking and Health in the Department of Health and Human Services. Up until this time the Office has been an executive creation and is subject to the will and whims of the Administration and the Secretary of Health and Human Services. This subject is of such great importance to the American public that it deserves a Congressional mandate to assure its support and survival.

2) In view of its importance, I recommend that the Congress authorize a level of annual support which is consonant with its responsibilities.

Over the years this program has suffered from a lack of budgetary support. Not only has the support been changeable and inconsistent, but that support has been lumped with other PHS responsibilities to the extent that it has not had reliable, adequate financial support. It is about time that the Congress should not only indicate its support but to also stipulate an expenditure level which will be required to carry out the Congressional mandate in a responsible fashion.

As an example, the smoking program in the Public Health Service was supported at about $3 million in 1972. Over the ensuing years the level of support has varied in competition with other health programs and its lack of specific support in the Departmental budget. At the present time, the allocation of funds to the Office on Smoking and Health is about $2 million. You can appreciate what this decrease is in actual dollars with the inflationary increase of the past 10 years. It realistically amounts to the fact that the Federal government is not convinced of the importance of this issue and is willing to let it die of starvation. I can't believe that this is the intention of the Congress but is the result of a lack of statutory authorization of the Office on Smoking and Health and the lack of a specific authorization and appropriation for the Office. I hope that this session of the Congress will correct this serious deficiency.

I would suggest that an authorization of $10 million per year over the next few years would be a wise provision. In turn, I would hope that the Appropriation Committee would recognize this need and meet this authorization.

3) I support the definition of responsibilities of the Office on Smoking and Health and would like to emphasize the importance of an educational program on smoking. It is a sad commentary that our society allows the tobacco industry to spend $1.0 billion a year on advertising and yet the Office on Smoking and Health can barely afford to compile and publish its annual report to the Congress. We need a massive information and educational program which not only reaches the general public but is especially directed at our youth. This costs money and I can think of no better way to spend our tax dollars.

4) I agree with the need for more research on the subject of smoking and health. In doing so, I do not agree with the tobacco industry which closes its eyes and ears to all of the current scientific information and blandly suggests that "the issue of health damage is not settled and we need more research". I submit to you that the facts of the health issue of smoking is incontrivertibly established - but we do need more studies to futher clarify the mechanisms by which smoking produces its damage, and especially behavioral studies to assist us in convincing our public, especially our youth, to not start smoking or to quit before they are "hooked".

In using the term "hooked", I do so with full appreciation of the term. It is my personal conviction that cigarette smoking is an addiction. As I have worked with smokers over the years, it has become quite clear to me as a physician that tobacco smoking is addictive. I have seen and worked with so many smokers who want to quit and yet they are unable to conquer this need for the tobacco smoke effect. I have sat through personal conferences with many smokers who are trying to quit and seen them manifest the characteristics of "hard drug" withdrawal to doubt that it is a true physiological dependence. The psychological dependence on smoking is clear and evident, but I am convinced that a chronic cigarette smoker has a true physiological dependence and that this is the problem with so many of our smokers who attempt to quit. To see a smoker go through the tremor, the sweating, the inability to concentrate, and the other serious disturbances of body functions related to withdrawal can not lead to any other conclusion. Unfortunately, I am afraid that a large percentage of our physicians do not appreciate this problem and often do not give the medical support that is needed when their patients are trying to quit smoking.

5) I commend the provision of HR 4957 to require an annual report to the Congress from the Public Health Service. I am grateful that the original Congressional Act of 1965 required such a report (as well as a report from the Federal Trade Commission). In the fight for operating funds, I am convinced that the Public Health Service would not have provided the necessary funds for the annual report had it not been required by the Congress. We can not allow this requirement for up to date scientific information on Smoking and Health to vacillate with the whims of budget manipulators in the Federal beaurocracy.

The other fact gathering and informational activities of the Office are also important.

6) I strongly endorse the creation of an Interagency Committee on Smoking and Health as provided by HR 4957.

7) The problem of labeling of a health warning is one of the principal parts of HR 4957. I agree with the Federal Trade Commission that the current warnings are relatively ineffectual. Yet, I can not agree that they have had no effect. Time and again I am identified in a social or business meeting as the person who was primarily responsible for this "warning". I have been gratified on many occasions to have the smoker pull a pack of cigarettes from his pocket and say, "oh, you proposed this warning?" Though some continue to smoke, they are aware of the warning, but I like the FTC, would like for it to carry more of a "wallop".

Some of you may recall that in 1965 my staff and I in testimony before Congressional Committees recommended a more prominent and explicit health warning. We even presented to the Committees mockedup packages of cagarettes with the warning in large print across the front of the package. Nevertheless, the Congress in its ultimate wisdom elected a less explicity warning to be placed in small print in the edge of the package. Though it was not what we wanted and recommended, I am grateful that the Congress took this giant step to recognize for the first time that smoking is harmful to your health. I am futher pleased that in the renewal of the Act in 1970 the Congress decided to make the warning more positive in saying that "The Surgeon General has determined that smoking is dangerous to your health". Since all of the Surgeon Generals for the past 20 years have sanctioned this statement, I think each of us claims a part of the action but since the real hallmark in this fight was the report of 1964, I do claim a bit more of the responsibility and credit.

I applaud the action of the Congress in requiring a more explicit warning in 1970 but I do not feel that the present warning is adequate in either its contex or its prominence. For instance, I agree with the FTC in recommending a rotating warning which refers to certain disease entities but I would also urge more prominence to the warning. I still believe that the warning should be across the face of the package. I also feel that such warnings should be on cigarette dispensing machines and that the warning on billboards and other similar outdoor advertisements should be larger and more legible. The present warnings on billboards and similar outdoor advertising is so small and difficult to read that it is almost completely ineffectual. The warning here, too, should be more explicit and of such size that it can be read by the passing motorist without his having to stop on the roadside, and get out his binoculars, in order to determine the complete message on the billboard. It is rediculous!

8) I agree that published and advertising information should not only reveal the tar and nicotine contents of cigarettes but should also reveal the carbon monoxide yield. Recent scientific evidence has revealed that exposure of persons to carbon monoxide is more important than we previously recognized. Scientific technology provides tests by which carbon monoxide can be accurately measured. In light of these facts, I think that a listing of the carbon monoxide yield of cigarette smoke is probably as important as tar and nicotine yields. I recommend that it be required on all cigarette packages and in all cigarette advertising and sales.

9) In relation to the health warnings on cigarettes manufactured for export, I strongly recommend a health warning on the principal language of that country be required on all cigarette packages and advertising. In my dealings with our international neighbors, it has been embarrassing to me to acknowledge the health warnings required on cigarettes for domestic consumption and yet not requiring a similar warning on the product which is for consumption abroad. I am aware

that in most of the advanced countries that a health warning is required by their local laws. In those countries where there are not such requirements, American products should provide the same type of health warning that we require for domestic consumption in their language.

With regards to the foreign market, I am concerned about the increased emphasis that American cigarette manufacturers are exerting in the developing countries. The increase in the advertising thrust in recent years is tremendous. I interpret this effort as an attempt to protect their industry in the face of a clearly decreasing demand in the United States. It is a rather sad commentary that our government and industry should concentrate on supplying the developing countries with cigarettes and military supplies, rather than food, social programs and other developments which would lead to improvement rather than destruction of their nations. To my mind, the use of cigarettes and tobacco products is one of the most destructive elements which we could promote in the developing countries.

10) In commenting earlier on the types of health warnings on packages and advertising, I did not remark about the experience in Sweden and the United Kingdom in this regard. Both of these countries have for several years required varied and specific health warnings on cigarette packages and advertising. Frankly, I do not know how effective these programs have been. In general, I get the impression that they have been reasonably effective, but definitive evidence is not available to me. I would suggest to this Committee that you assign staff or employ reliable consultants to take a careful look at the Swedish and United Kingdom experience for your information. We do not need to reinvent the wheel.

Overall, I applaud the action of this Committee in recognizing the importance of this issue. As I have said earlier, it is one of the most important health issues facing the American public and our responsible leaders. We can either face up to the issue or we can bury our heads in the sand and hope it will go away. I would dare submit, that in the latter circumstance the issue will persist longer than we are able to survive with our inability to breathe under the sand.

Mr. **Waxman**. Thank you very much, Dr. Terry.

In your view, what is the most significant new information we have learned about the health effects of smoking since your report was issued?

Dr. **Terry**. I think the confirmation of the effects on coronary arteries and coronary heart disease is by far the most significant. It is the most significant because it involves so many more people and is such a life and death measure in so many instances.

There are others that are of considerable importance, particularly in relation to smoking and pregnancy. But the number of people involved, the potential dangers and death even in this important area of pregnancy is not anything to compare with the problem in relation to cardiovascular disease.

Mr. **Waxman**. You mentioned the Office of Smoking and Health that was, I believe, started in the mid-sixties. Is that correct?

Dr. **Terry**. No. The Clearinghouse on Smoking and Health was set up by me, as a matter of fact, when I was Surgeon General, and it operated under that name and in that capacity until Secretary Califano changed the name, upgraded its status from the Public Health Service to the Department and changed it in that respect.

There has been a continuing program. As you know, there have been reports regularly from the Public Health Service to the Congress.

Mr. **Waxman**. The Office of Smoking and Health, which is now part of the Department of Health and Human Services, is something that this bill would make statutory. We would authorize it to be part of the Government and to be funded each year by the Congress.

As it is now, the Office could be abolished if the Secretary and the rest of the administration agreed to it. It could be abolished by the Office of Management and Budget, just striking the item from the budget.

Now, you worked with the Congress. You know this is an authorizing committee. We set up an agency or we set up a program. But then the funding must go through the Appropriations Committee.

You indicated at one time $3 million was the amount given to this effort by the Federal Government. Now the Office is funded at $2 million, with 12 employees.

I am wondering if that in any judgment could be considered a huge government bureaucracy to deal with a problem of this magnitude; second, and whether from your experience of working with the Congress if we authorized a statutory agency could we expect that the Appropriations Committee would increase appropriations above the $2 million in the current budget?

Dr. **Terry**. Mr. Chairman, I think, to be quite frank and realistic about it, the recommendation from the department recently and from the Public Health Service, if you are interested in the number of employees needed in the Office of Smoking and Health and amount of funds needed, is absolutely ludicrous.

Obviously it is a decision that is handed down from the top of the department. Who else participates in it, I do not know, but I think the relatively recent resignation of the director, the head of the Office of Smoking and Health, Mr. John Penny, is an excellent example of what he thought was the direction in which it was going by this cut in the number of employees and even the meager amount of funds available.

Mr. **Waxman**. You touched on the other aspect of the bill that should get some attention, and that is the export of tobacco products from the United States overseas, particularly to Third World developing countries.

It is unlikely their governments have any kind of program for making available to their citizens information about the dangers of smoking. I doubt very much that there is a voluntary heart association, lung association, or cancer society anywhere near the caliber we have in this country.

We have permitted cigarettes to be exported to these countries without any health warning. Do you have any basis to believe that except by word of mouth, occasionally, some of these people could have any idea that this habit being pushed upon them is a dangerous one and that they will live, maybe die, to regret it?

Dr. **Terry**. It is a very complicated question, if one can characterize it as a question.

In the first place, I think there are a few of the more educated, the more advanced people in those countries that do recognize it. I don't think the vast majority of them do.

I am not sure how many would be informed, how many more would be informed with a health warning on cigarette packages and labels. On the other hand, I am sure some more would be.

Frankly, as a loyal American citizen I would be much more happy to think my Government required this sort of labeling for its foreign neighbors as well as its domestic consumption.

One other thing in that respect. I think that there isn't much that we can do as American citizens other than requiring such a warning for all American products in those countries.

But I think we have to depend a great deal on the World Health Organization and its various organizations, like the Pan American Health Organization, which is the regional office for WHO in the Americas.

I think we have to work, support, help WHO and its regional offices and activities. I think that this is the thing that we can do best and most effectively. This, I think, is already underway, that the World Health Organization has an expert committee on smoking or health.

They first created that particular phrase, "smoking or health." Furthermore, last year smoking was taken as the World Health subject of the year, and World Health Day was devoted to the subject of smoking or health.

So, I think there are others who will be working on it. I think that we need to assist in that direction, but there are certain things that are our definite and direct responsibility, such as the labeling of our export products.

Mr. **Waxman**. Mr. Bliley.

Mr. **Bliley**. Thank you, Mr. Chairman.

Thank you, Dr. Terry, for appearing today.

Doctor, in this time of fiscal restraint that we are in, don't you think it would be more prudent to evaluate the use of rotating cigarette labels before we require them?

Dr. **Terry**. I am not convinced that I know what you are talking about when you talk about fiscal austerity and rotating labels for the simple reason that I do not believe that the rotating labels would pose any real appreciable increased cost.

Mr. **Bliley**. You don't?

Dr. **Terry**. No, I don't. I can't see why, if you were changing the health warning label once a year, to think that changing the presses to change the wordage of that label for that particular manufacturer would cost anything very much. I can't believe it.

Mr. **Bliley**. I think you would find plant managers who would tell you that when you shut down equipment and machinery and stop people to make changes, that it does cost considerably.

Dr. **Terry**. I can't conceive a plant having to be shut down very long for that particular change, sir.

Mr. **Bliley**. I see.

The other part of my question is we couldn't know what this is going to do, so why put it in? I mean, as a physician you wouldn't recommend a procedure for treating a patient until it had been evaluated, would you?

Dr. **Terry**. I don't think the question you pose to me is quite a proper one or could be answered directly. As a physician, I would recommend to my patient anything that I thought would improve that person's health, whether it was of a preventive or a curative type.

I am quite convinced that this would add some more to the effectiveness of the health knowledge of the American people, if we had a more specific warning, if we had a warning which was rotated.

Frankly, I would like to see, Mr. Bliley—though I don't believe you were in the Congress at that time, not on this committee, anyhow—back in 1965, when we were testifying before this committee we presented to the committee marked up cigarette packages in which we had very prominent wordage across the front of the package and recommended specific explicit warning.

The Congress, in its ultimate wisdom, decided not to do that and decided on a less explicit warning on the edge of the package. Even that we were grateful for, because it was the first time that the Congress had ever officially recognized smoking as a health danger.

I think we have come a way now, that there is reason to believe that more explicit warnings, more prominently displayed and rotating in type, would be more helpful.

For instance, we don't have any final results, but the evidence in Sweden is strongly suggestive. Sweden requires a rotating warning. Some of the studies there recently have suggested that a larger number of the people are aware of a health warning on the package since it became a rotating type of warning.

On the other hand, I think frankly that we do not have enough evidence to say it is clear from the Swedish experience that so and so and so and so. I think there is strong evidence that it suggests that such warnings are helpful.

Mr. **Bliley**. Finally the message is getting across in this country. George Gallup's poll says 92 percent. That is a pretty high rating. If any member of this body has a 92 percent name ID, they don't worry too much about the other 8 percent.

Dr. **Terry**. I am not disputing a fact of Mr. Gallup, but Mr. Gallup has been wrong before on some of his polls.

Mr. **Bliley**. Are you suggesting he might be wrong here?

Dr. **Terry**. I am suggesting he is wrong. I don't believe 92 percent of the people are aware of the meaning of the current health warnings.

Mr. **Bliley**. What do you base that suggestion on?

Dr. **Terry**. On my observations and discussions with people.

Mr. **Bliley**. I see.

Doctor, moving on to the subject, the labeling itself, the public seems fully aware of what you and other Surgeons General have said about smoking, as has been documented repeatedly in public opinion polls.

Doesn't this show that the Government and private organizations have succeeded in educating the American public?

Dr. **Terry**. I don't think they have succeeded in educating them enough.

Mr. **Bliley**. I see.

Dr. **Terry**. I think yes, there has been some informational, eduational effect. I don't think it is enough.

Mr. **Bliley**. When you were the Surgeon General in 1964, the report of your Advisory Committee emphasized that smoking, and I quote, "should be labeled 'habituation' to distinguish it clearly from 'addiction.'" Since that time numerous scientists have repeated this distinction including, for example, Dr. Ernest Wende in 1979.

Don't you believe in view of the scientific uncertainty in this area that the warning related to addiction proposed by this bill cannot be justified?

Dr. **Terry**. I don't want to argue about the details of each specific warning. On the other hand, let me say very directly that it has been my personal conviction that cigarette smoking is addictive.

Mr. **Bliley**. In spite of what your Advisory Committee said in 1964?

Dr. **Terry**. There are many things we know now that the Advisory Committee did not know in 1964. Yes, regardless of what the committee reported at that time.

Mr. **Bliley**. In spite of what Wende said in 1979?

Dr. **Terry**. What did the committee say about cardiovascular disease in 1964? They pointed out a higher mortality rate among smokers. At that time they were reluctant to attach a cause and effect relationship to smoking and coronary disease.

On the other hand, I think the evidence since that time has quite clearly demonstrated that there is a cause and effect relationship and this was clearly brought out in the 1979 report of the Surgeon General.

Mr. **Bliley**. So you would change and say it is now addictive as opposed to merely——

Dr. **Terry**. I said it is my conviction that cigarette smoking is addictive to many people.

Mr. **Bliley**. Thank you, Doctor.

Mr. **Waxman**. Mr. Rogers.

Mr. **Rogers**. Dr. Terry, have you any training or experience or background in behavioral research or behavioral science?

Dr. Terry. I am having difficulty hearing you.

Mr. Rogers. I am sorry. Have you any background or training in behavioral science or behavioral research?

Dr. Terry. That is a difficult question. I have not had formalized training in psychiatry, psychology or behavioral research of that sort.

Mr. Rogers. You have not had practice in that area, either, have you?

Dr. Terry. I don't think any physician practiced medicine, as I did for many, many years, without practicing in full recognition of human behavior.

Mr. Rogers. Well, I am a lawyer. I practice behavioral science in practicing law. We all practice behavioral science in our way of life. As a medical doctor, have you had any training or practice in behavioral science?

Dr. Terry. I have had a lot of experience in behavioral sciences in dealing with patients and their problems.

Mr. Rogers. I am wondering why you don't address the subject here today because this bill really addresses behavior and behavior research of the American people.

I happen to agree with George Gallup. At least he is in the ball park. Until you show me something different I am going to believe that 90 percent of the population of the country agrees that cigarette smoking is harmful and don't need to be warned anymore.

The question is how do you make them behave according to the science that they know? That subject has not been addressed by any witness here this morning, from a background in that science, and I would wonder why there are no behavioral researchers here this morning to tell us the answer to that.

Gallup also says that the percentage of smokers in the country is down to the lowest point in history in 37 years. It seems to me what this Congress adopted a few years back, and your report, which started off the debate, it seems to me that what is being done is working.

Can you argue with that?

Dr. Terry. It has been intermittent and spasmodic over these 18 years. At the same time, I think overall we have made progress, and I am very happy for that. I think we should keep up what we are doing, but we need to do more.

Mr. Rogers. Thank you very much.

Mr. Waxman. Thank you, Mr. Rogers.

Dr. Terry, again, my appreciation for your being with us. You were very helpful to us.

The subcommittee will now recess until 2.

[Whereupon, at 12:15 the subcommittee recessed, to reconvene at 2 p.m., the same day.]

AFTER RECESS

[The subcommittee reconvened at 2 p.m., Hon. Henry A. Waxman, chairman, presiding.]

Mr. Waxman. The meeting of the subcommittee will please come to order.

Our last panel today represents the advertising and publishing trade associations. Eric Rubin is Counsel for the Outdoor Advertising Association of America. Michael Waterson is Research Director of the Advertising Association and represents the American Association of Advertising Agencies. David Minton is Washington Counsel for the Magazine Publishers Association.

We would like to welcome each of you today to our hearing. Come forward, if you would, please. Without objection your full prepared statements will be made part of the record. We would like to ask you to summarize those statements in as brief a period as possible so we can have an opportunity for questions.

STATEMENTS OF MICHAEL J. WATERSON, ON BEHALF OF AMERICAN ASSOCIATION OF ADVERTISING AGENCIES, AMERICAN ADVERTISING FEDERATION, AND ASSOCIATION OF NATIONAL ADVERTISERS; ERIC RUBIN, COUNSEL, OUTDOOR ADVERTISING ASSOCIATION OF AMERICA; AND DAVID MINTON, WASHINGTON COUNSEL, MAGAZINE PUBLISHERS ASSOCIATION

Mr. WATERSON. I would like to thank the chairman for giving me time to testify today on behalf of the American Association of Advertising Agencies, the American Advertising Federation, and the Association of National Advertisers.

I would also like to introduce myself. I am Research Director of the Advertising Association, based in London. I am also a member of the Council for National Academic Awards.

The function of the Advertising Association is to see that the interests of manufacturers, advertising agencies and the media are represented in the United Kingdom and European parliaments, and to insure that issues such as the one under discussion here today are debated fairly, and in the light of all available research evidence.

We have worked closely with the EEC Parliament, with the Council of Europe, and the British Government on the questions concerning the advertising of alcoholic drink, advertising to children, and the incidence of false advertising claims.

It is also relevant for me to point out the the Advertising Association did not defend cigarette advertising without first researching areas where we felt uncertain of our position. If our research had indicated areas of concern, I would not be here today.

In short, the Advertising Association would not jeopardize its hard-won position of respect in Europe, by defending a doubtful cause. I do believe that there are good grounds for rejecting the measures proposed in H.R. 4957.

My reasons derive from the research evidence available which shows that restrictions on cigarette advertising do not have any effect on overall cigarette consumption. Restrictions do however slow down the transfer of smokers to low-tar, low-nicotine brands.

The evidence ranges from econometric studies, which isolate the impact of factors such as price, and health campaigns on consumption; through to appraisals of perception of cigarette ads and anti-cigarette ads, through to comparision studies of the different markets.

In my opinion a lot of information can be got from this data, since the position varies from country to country. For example, in Switzerland there is virtually complete freedom to advertise following a recent referendum. In Norway and Poland bans on cigarette advertising exist. In Norway a massive health campaign has accompanied the ban. Yet per capita cigarette consumption has hardly varied over the 5 years before the ban or the 6 years since. In Sweden 16 health warnings rotate on cigarette packs, but no effect can be detected. In Finland the main effect of the ban has been to slow down the transfer of smokers to low-tar brands.

The research evidence suggests clearly that the governments that have tried to reduce smoking by restricting tobacco ads have not been successful.

The reason is simple, cigarette ads do not sell the idea of smoking. Cigarette ads sell brands and most importantly, low-tar and low-nicotine brands.

The evidence from econometric analysis backs up this commonsense view. Many such studies have now been conducted in Europe on cigarette and similar markets. None show ads exerting any influence other than at the brand level.

This explains why health messages on packs don't work. It is relatively easy to sell a new brand. It is virtually impossible to make people smoke more cigaretts or use more gasoline through advertising. Similarly, modifying the behavior of smokers not to smoke is extremely unlikely to result from health warnings on packs or in ads.

In addition to this aspect, health warnings are shown by the evidence to be ignored because they are messages smokers don't want to receive. In the United Kingdom it is almost impossible to find a smoker who doesn't know the health hazard. Yet it is also almost impossible to find a smoker who knows the words used in the pack warnings.

The fact is, that other parameters such as income and price level are far more important. For example, in Britain, cigarette consumption fell by 15 percent last year due to a large price rise.

For these reasons, it is my view that H.R. 4657 will not contribute to a decline in cigarette consumption. If it is enacted into law, it will, however, contribute directly to a fall in the rate of conversion of smokers from high to low-tar brands.

The research evidence shows that countries such as the United States and West Germany where cigarette advertising is permitted have experienced a more rapid conversion rate to low-tar cigarettes, than countries such as Norway and Poland where advertising is banned. Any interference with the effectiveness of brand advertising, such as that proposed by H.R. 4957, will certainly slow down this conversion process.

Finally, I would submit that H.R. 4957, if passed, will set a dangerous precedent. In every country in Europe and imposition of cigarette advertising regulations has signaled the start of demands that the advertising of other product groups be restricted.

I would suggest that if H.R. 4957 is enacted, it will form the basis for demands for the restriction of the advertising for many other products in common usage today. As such it strikes at the heart of the market system of the United States.

To conclude, I believe that H.R. 4957 will not succeed in its aims if passed.

To quote one of the most recent studies produced by a major research organization in Germany, "every country in the world that has tried to reduce smoking by restricting tobacco advertisements has been unsuccessful." The experiment has been tried, and has failed. In Italy cigarette advertising is to be allowed again after a 20-year ban, during which period consumption rose by 60 percent. In all probability however, the bill, if enacted, would have unfortunate and unlooked for consequences of a serious nature.

I will be happy to answer any questions, but before I do I would like to mention that copies of my report on this subject have been inserted for the record, and made available for members of the committee. I will be happy to supply the committee with copies of any other research evidence I have referred to.

Thank you for your time.

[Mr. Waterson's prepared statement follows:]

Testimony of Michael J. Waterson for the American Association of Advertising Agencies, the American Advertising Federation, and the Association of National Advertisers Before the House Subcommittee on Health and the Environment of the Committee on Energy and Commerce on H.R.4957, The Comprehensive Smoking Prevention Act of 1981

March 5, 1982

I would like, first of all, to thank the Chairman for giving me time to testify today on behalf of the American Association of Advertising Agencies, the American Advertising Federation, and the Association of National Advertisers, on his legislation designed to reduce cigarette consumption by further restricting cigarette advertising.

As you are aware, the advertising industry is heavily affected by recommendations in your legislation. We welcome this opportunity to appear before your committee to illustrate the practical effects of such action which may be counter-productive to the very nature of your intent.

Secondly, I would like to introduce myself, and the organization I work for.

I am Research Director of the Advertising Association, based in the United Kingdom. I have an honors degree in Econometrics, and a masters degree in Marketing.

The Advertising Association has existed for more than 50 years. Its function is to ensure that the joint interests of manufacturers, advertising agencies and the media are fairly represented in the United Kingdom and European parliaments.

Our purpose is to work with governments, to ensure that issues such as the one under discussion here today are debated fairly, and in the light of all available research evidence.

For example, we worked closely with the British government to research exhaustively the incidence of false and misleading advertising claims, in conjunction with leading consumer organizations.

We have worked closely with the European Economic Community, Parliament and Commission, and with leading European consumer groups to research the questions arising about advertising to children.

And we have worked in harmony with leading organizations in Europe concerned with alcoholism, with the Council of Europe, the EEC Commission and the British Department of Health on the questions concerning the advertising of alcoholic drink.

I feel it is also relevant for me to point out that the Advertising Association did not undertake the task of defending the place of cigarette advertising in Europe without first researchin the issues involved. We spent two years debating the various points with our members and researching areas where we felt uncertain of our position. If our research had indicated areas of concern, such as suggesting that cigarette advertising was a factor in promoting total sales of cigarettes, I would not be here today.

In short, the Advertising Association would not be prepared to jeopardise its hard-won position of respect in parliamentary circles in Europe, by defending a lost or doubtful cause. I do believe that there are good grounds for rejecting measures such as those proposed in H.R.4957.

My reasons derive from the research evidence I have collected in recent years, which shows that restrictions on cigarette advertising do not have any effect on overall cigarette consumption. Advertising restrictions do however slow down the transfer of smokers to low-tar, low-nicotine brands.
In my opinion H.R.4957 may well result in a decline in cigarette advertising, denying valuable product information, particularly relating to new low-tar brands, to consumers, and therefore having an effect the very opposite of that intended.

The research evidence I have examined ranges from major econometric studies, which attempt to isolate the impact of various factors such as income, price, and health campaigns on cigarette consumption; through to appraisals of consumers' perceptions of cigarette advertisements, anti-cigarette advertisements, and advertisements defending cigarette advertisements; through to comparison studies of the different European markets where many different types of attempts have been made to cut smoking.

In my opinion a great deal of useful information can be derived from this mass of data, since the position varies so greatly from country to country in Europe. For example, in Switzerland there is virtually complete freedom for the manufacturers to advertise where and how they like, following a recent referendum on the issue. In Norway, Sweden and Finland a complete ban on cigarette advertising exists. In Norway a massive health campaign has accompanied the cigarette advertising ban. Yet per capita cigarette consumption has hardly varied over the five years before the ban or over the six years since. In Sweden, no less than 16 health warnings rotate on cigarette packs, but no effect can be detected. In Finland the main effect of the advertising ban has been to slow down the transfer of smokers to low-tar brands.

In the UK cigarette advertising is allowed, but consumption dropped by 15% last year due to a very large price increase.

The research evidence suggests clearly that of the governments that have tried to reduce smoking by restricting tobacco ads or by increasing the number of health warnings, none has been successful.

The reason is simple, cigarette ads do not sell the idea of smoking. Cigarette ads sell brands and most importantly, low-tar and low-nicotine brands.

The evidence from properly conducted econometric analysis backs up this common sense view. A large number of such studies have now been conducted in Europe on cigarette and similar markets. None show ads exerting any influence other than at the brand level.

This partly explains why health messages on packs don't work. It is relatively easy to sell a new brand. It is virtually impossible to make people smoke more cigarettes or use more gasoline through advertising. Similarly modifying the behavior of smokers not to smoke is extremely unlikely to result from health warnings on packs or in ads.

In addition to this aspect, health warnings are shown by research evidence to be ignored because they are messages smokers don't want to receive. In the United Kindgom it is almost impossible to find a smoker who doesn't know the health hazard, or who has not at some stage tried to give up smoking. Yet it is also almost impossible to find a smoker who knows the words used in the pack warnings.

The fact is, that the only factor we can find associated with falling cigarette consumption, is the price of cigarettes.

For these reasons, it is my view that H.R.4957 will not in any way contribute to a decline in cigarette consumption in the USA. If it is enacted into law, it will, however, contribute directly to a fall in the rate of conversion of smokers from high to low-tar and low-nicotine brands.

The research evidence shows quite clearly that countries such as Finland and Norway with cigarette advertising bans, or countries where advertising is highly restricted, have a smaller proportion of the population smoking low-tar and low-nicotine cigarettes. Countries such as the USA and West Germany where cigarette advertising is permitted have experienced a much more rapid conversion rate to low-tar cigarettes. Any interference with the effectiveness of brand advertising, such as that proposed by H.R.4957, will certainly slow down this conversion process. Finally, I would submit that H.R.4957, if passed, will set a dangerous precedent.

In every country in Europe where cigarette advertising is restricted or banned, the imposition of regulations has signaled the start of fresh demands that the advertising of other product groups should be restricted.

I would suggest that if H.R.4957 is successful, it will form the basis for demands for the restriction and regulation of the advertising for many of the other products in common usage today. As such it strikes at the heart of the market system of the USA.

To conclude, I believe that H.R. 4957 will not succeed in its aims if passed. To quote one of the most recent studies on the subject, produced by ZAW in Germany, concerning data from 14 countries "every country in the world that has tried to reduce smoking by restricting tobacco advertisements has been unsuccessful." Therefore there is no reason for the United States government to experiment in the area. This experiment has already been attempted in Western Europe without success. In all probability however, the bill, if enacted, would have unfortunate and unlooked for consequences of a serious nature, such as discouraging sales of new products or product improvements.

I'll be happy to answer any questions, but before I do I would like to mention that copies of my report on this subject have been inserted for the Record, and made available for members of the Committee. I will be happy to supply the Committee with copies of any other research evidence I have referred to.

Thank you for your time.

Mr. **Waxman**. Thank you very much, Mr. Waterson.
Mr. Rubin.

STATEMENT OF ERIC RUBIN

Mr. **Rubin**. I am counsel to the Outdoor Advertising Association of America (OAAA). OAAA is the trade association of the standardized outdoor advertising industry. I am also a partner in an outdoor advertising business located in Lynchburg, Va., and am testifying before the subcommittee today from that dual perspective.

The OAAA appreciates this opportunity to testify regarding the advertising restrictions that would be imposed on cigarette advertising by H.R. 4957 and to state its opposition to those provisions.

H.R. 4957 is predicated on the sponsors' conclusion that cigarette smoking is a health hazard and that current Federal, State, and private initiatives have been insufficient to inform the American public of the health consequences of smoking.

In this regard, the bill largely parallels an extensive series of staff recommendations already under consideration by the Federal Trade Commission.

In the OAAA's view, the question of whether the warning text should be revised has been largely eclipsed by the public's virtually universal understanding of the potential hazards of smoking. The FTC staff report itself points out that 90 percent of the American public now understands that cigarette smoking is potentially dangerous to health.

From a practical standpoint there is a serious question whether the additional disclosures mandated by this bill would have any perceptible impact on cigarette consumption. This is borne out by testimony presented by the first panel this morning and is documented by the empirical data presented in Dr. Waterson's testimony today. It is difficult to understand how more specific advertising disclosures would achieve a level of public awareness that has not already been attained given the plethora of detailed product information generally available and already comprehended by the public.

The advertising regulation provisions of H.R. 4957 are troublesome from a legal, as well as policy, standpoint. It is essential to recognize that cigarettes are a lawful commodity and that current cigarette advertising incorporating the Surgeon General's warning is lawful commercial speech that is protected in the first amendment.

As a result, despite its substantial interest in public health issues, the Congress does not have unfettered discretion to impinge on that advertising.

It is easy to lose sight of these principles when considering dramatic issues such as smoking and health. Nevertheless, the subcommittee must confront the fact that H.R. 4957 imposes specific prior restraints on protected speech and that the courts have emphasized that every such restraint is inherently "suspect."

The operative constitutional standard is that any governmental restriction of protected speech must be the "least restrictive means" available to achieve the governmental objective. Given the effectiveness of the current health warning system, the imposition of a new, more burdensome disclosure scheme is almost by definition not "the least restrictive means."

Finally, it should also be noted that separate first amendment problems are raised by section 4(d) of this bill which would increase the penalty from $10,000 to $100,000 for each violation of the Cigarette Labeling Act.

With a potential penalty of this magnitude for noncompliance, it is easy to see how these provisions could themselves become a deterrent to otherwise lawful speech. This potential "chilling effect" on speech alone would represent an infringement on first amendment protections.

Indeed, if enacted into law, the constitutional fate of this bill might well be sealed if even one cigarette manufacturer decided that it was compelled to abandon or even significantly reduce its advertising in order to diminish or avert the potential exposure to criminal penalties.

Finally, the OAAA would like to address itself briefly to that part of the legislation which requires the conspicuous display of the health warning. Certainly until very recently, this was the most serious issue with respect to the dissemination of cigarette advertising in the outdoor medium.

But in July 1981, the F.T.C. filed five companion consent judgments in U.S. District Court which resolve this issue by establishing an entirely new and unique warning format that is to be used solely for billboards. These consent judgments abandon the tightly contained warning rectangle format that has been in use for ten years and require instead that a greatly enlarged Surgeon General's warning be displayed within a segregated banner that extend across the entire length of each sign. My lovely assistants here will show you two examples. This is the actual billboard copy, was until last Monday, the warning displayed on poster-size billboards which were 12 by 24 posters.

The right-hand side is the warning which now appears as of Monday when the consent order finally came into effect. You can see the distinction and difference between the two warnings is very graphic. That is the actual size.

Indeed the new warning format already provides the type of conspicuous dislosure on billboards that would be required by the instant legislation.

The OAAA appreciates this opportunity to present its views. Thank you.

[Mr. Rubin's prepared statement follows:]

TESTIMONY OF OUTDOOR ADVERTISING ASSOCIATION OF AMERICA REGARDING H.R. 4957

My name is Eric Rubin. I am an attorney in private practice in Washington, D.C. and counsel to the Outdoor Advertising Association of America (OAAA). OAAA is the trade association of the standardized outdoor advertising industry. I am also a partner in an outdoor advertising business located in Lynchburg, Virginia and am testifying before the Subcommittee today from that dual perspective. The OAAA appreciates this opportunity to testify regarding the advertising restrictions that would be imposed on cigarette advertising by H.R. 4957.

The OAAA is comprised of one hundred and seventy member-companies that serve 7,900 distinct local advertising markets throughout the United States. The OAAA's members are principally small, locally-based, family-owned businesses operating in a single locality, or in several contiguous areas within a particular state. Other OAAA members are relatively large companies which operate on a regional or national basis.

Like all other media, outdoor advertising is purchased by both national and local advertisers for the dissemination of all types of commercial, political and social messages. In 1980, outdoor advertising represented 16.64% of media expenditures for advertising of the 15 leading cigarette brands.1/ During that same period, cigarette advertising represented approximately 15% of all ads disseminated on outdoor advertising. These communications are

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1/ Leading National Advertisers, Media Decisions, October, 1981, Page 174.

presented in two basic standard-sized billboard formats. The "poster panel" is a 12 foot by 24 foot sign upon which a pre-printed message is posted. A "painted bulletin" is a 14 foot by 48 foot sign which contains a hand-painted message. Posters are maintained in one location and advertising copy is periodically pasted onto the surface of the sign. The painted bulletin sign face is hand-painted at a central production facility and is then transported in sections and affixed to a permanently installed support framework. A bulletin will remain in one location for a period of time, usually two months, and is then disassembled and replaced by another message while the first message is relocated to another billboard structure. In this way, the same hand-painted message is moved to a series of different sites in a metropolitan area over a six month or twelve month period.

H.R. 4957 is predicated on the sponsors' conclusion that cigarette smoking is a health hazard and that current Federal, State and private initiatives have been insufficient to inform the American public of the health consequences of smoking. Thus, the bill would impose a series of new boilerplate health warnings for insertion in cigarette advertisements to educate the American public. These warnings would be rotated between the advertisements for each cigarette brand over a six-year period of time. In this regard, the bill largely parallels an extensive series of staff recommendations already under consideration by the Federal Trade Commission.

At first glance, the proposed legislation would seem to advance a relatively benign public public policy. But in a very real sense, it seems incongruous that the very complex and emotionally laden question of how far the government should go in attempting to curb cigarette smoking should be played out within the narrow context of advertising regulation. In the OAAA's view, the question of whether the warning text should be revised has been largely eclipsed by the public's virtually universal understanding of the potential hazards of smoking. The F.T.C. Staff Report itself points out that 90% of the American public now understands that cigarette smoking is potentially dangerous to health. Indeed, the report released last week by the Surgeon General notes that since 1965 the proportion of Americans who smoke has decreased from 42% to 32%.

But implicit in H.R. 4957 is a policy which extends beyond a cognitive rationale. The apparent policy of the bill is that if cigarette advertising detailed the potential hazards of smoking to health then people wouldn't smoke; if perhaps the warning just a little more drastic, people would be scared and would quit.

In our view there is false logic lurking in this view. From a practical standpoint there is a serious question whether the additional disclosures mandated by this bill would have any perceptible impact on cigarette consumption. Clearly, consumer demand for these products is shaped by a complex series of factors. Indeed, at best it is unclear whether consumers would ever rely on advertising for more than the general type of information contained in the current warning system. The bill simply presumes that new and more specific advertising disclosures would achieve a level of public awareness that has not attained despite the plethora of detailed product information generally available and already comprehended by the public.

Perhaps the FTC itself best articulated the limitations of what can reasonably be accomplished through advertising disclosure when it first looked at the problem in 1964 at a time when public awareness was far less pervasive.

> "In attempting to fulfill its statutory reponsibilities to prevent unfair or deceptive cigarette advertising and labeling, the Commission should not be understood as attempting a comprehensive solution to the problem. Labeling and advertising restrictions could not, in any event, provide a complete answer to the social, moral, medical and economic issues raised by the widespread incidence of the smoking habit..." Statement of Basis and Purpose Accompanying Trade Regulation Rule For the Prevention of Unfair and Deceptive Advertising and Labeling of Cigarettes In Relation to the Health Hazards of Smoking (1964) at p. 7.

The advertising regulation provisions of H.R. 4957 are troublesome from a legal, as well as policy, standpoint. It is essential to recognize that cigarettes are a lawful commodity and that current cigarette advertising incorporating the Surgeon General's warning is lawful commercial speech that is protected by the First Amendment. As a result, despite its substantial interest in public health issues, the Congress does not have unfettered discretion in the selection of the measures to effect that purpose. Where the means it has selected impact on protected speech, the Congress clearly cannot exercise its authority independent of First Amendment considerations.

It is easy to lose sight of these principles when considering dramatic issues such as smoking and health. Yet, before going further with this legislation the Subcommittee must confront the fact that H.R. 4957 imposes specific prior restraints on protected speech and that the Courts have emphasized that every such restraint is inherently "suspect".[2] It does not matter that the regulations are thought to further some laudable government goal or that it may be convenient to appropriate advertising to conduct a public health education campaign. The operative constitutional standard is that any governmental restriction of protected speech must be the "least restrictive means" available to achieve the governmental objective. Given the effectiveness of the current health warning system, the imposition of a new, more burdensome disclosure scheme is almost by definition not "the least restrictive means". Inevitably, the bill raises serious First Amendment questions.[3]

The constitutional difficulties faced by this legislation can perhaps best be illustrated by reference to the reactions of the federal courts in analogous circumstances where the F.T.C. has ordered affirmative disclosure requirements. Attached to this testimony is a short synopsis of these cases. It will suffice here simply to point out that each time a Circuit Court has addressed the issue, the Court has narrowly proscribed the government's authority to impose restrictions on commercial speech through affirmative disclosure. Significantly, these decisions occur in the context of a finding that prior advertising was in fact deceptive. By contrast, cigarette advertising has for more than a decade has incorporated the Surgeon General's warning and is not similarly unlawful. Thus, it is difficult to believe that the courts will view with any greater favor the draconian warning system that would result from the instant legislation.

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[2] See, e.g., Beneficial Corp. v. F.T.C., 542 F.2d 611 (3d Cir. 1976), cert. den. 430 U.S. 983 (1977).

[3] Central Hudson Gas v. Public Service Commission, 447 U.S. 557 (1980).

Finally, it should also be stated that separate First Amendment considerations are raised by the Section 4(d) of H.R. 4957 which would increase the penalty from $10,000 to $100,000 for each violation of the Cigarette Labeling Act. Under these provisions, each separate nonconforming advertisement would constitute a distinct crime to which the penalty would attach. With a potential criminal penalty of this magnitude for noncompliance, it is easy to see how these provisions could themselves become a deterrent to otherwise lawful speech. The potential "chilling effect" on speech alone could represent an infringement on First Amendment protections.4/ Indeed, the constitutional fate of this bill, if enacted into law, might well be sealed if even one cigarette manufacturer decided that it was compelled to abandon advertising, or even significantly reduce it advertising for just a few of its brands, in order to diminish or avert the potential exposure to criminal penalties.5/

4/ See, e.g., Dumbrowski v. Pfister, 380 U.S. 479 (1965), Buckley v. Valeo, 424 U.S. 1 (1976)

5/ See, e.g. Oklahoma Telecasters Assoc. v. Crisp, ___ F.Supp.___ (W.D. Okla. 1981), 7 Med.L. Rptr. 2490.

Finally, the OAAA would like to address itself briefly to that part of the legislation which requires the conspicuous display of the health warning. Certainly until very recently, this has proven to be the most serious issue with respect to the dissemination of cigarette advertising in the outdoor medium. But in July 1981, the Commission filed five companion consent judgments in U.S. District Court[6] which establish an entirely new and unique warning format that is to be used solely for billboards. The consent judgments abandon the tightly contained warning rectangle format that has been in use for ten years and require instead that a greatly enlarged Surgeon General's warning be displayed within a segregated banner that extends across the entire length of the base of each sign. Unlike the original format, the warning must now conform to specific size requirements and must be displayed against a background which contrasts with the remaining advertising copy on the sign. The Commission's order also requires that the warning must be printed in a specific type style that maximizes the visibility of messages on billboards.

The billboard provisions of the consent judgments are not simply technical adjustments but rather represent a basic revision in Commission policy. Indeed, they are a manifestation of precisely the type of conspicuous disclosure that would be required by the instant legislation.

CONCLUSION

An effective health warning system for cigarette advertising already exists. Recent actions by the F.T.C. have dramatically improved the visibility of the warning in the outdoor medium. H.R. 4957 unwisely proposes to jettison current warning mechanism in favor of a more burdensome regulatory scheme. This proposed scheme raises serious First Amendment concerns that are made particularly accute by the proposal to impose a $100,000 criminal penalty for violations of the disclosure requirements.

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[6] See *United States of America v. Philip Morris, Inc.*, Consent Judgment 76 Civ. 815 (JMC); U.S. District Court for the Southern District of New York, July 13, 1981.

Synopsis of Circuit Court Decisions Limiting Affirmative Disclosure Orders of the F.T.C.

The Supreme Court first extended First Amendment protection to commercial speech in Virginia State Board of Pharmacy v. Virginia Citizen's Consumer Council, 425 U.S. 748 (1975). In subsequent decisions the Court has developed a clear-cut standard for reviewing government restrictions on advertising: government regulation of truthful commercial speech for a lawful activity must directly advance a substantial government interest and be no more extensive than necessary to serve that interest. Central Hudson Gas v. Public Service Commission, 447 U.S. 557, 566 (1980).

The incorporation of commercial speech within the penumbra of the First Amendment has forced a broad reexamination by the Circuit Courts of the substantial prior restraints that are inherent in all affirmative disclosure orders. The issue was clearly drawn by the Third Circuit in Beneficial Corp. v. F.T.C., 542 F.2d 611 (3d Cir. 1976), cert. den. 430 U.S. 983 (1977) There, the court noted that ordinarily it was obliged to "defer broadly to the Commission's exercise of informed discretion in forming remedial orders that bear some rational relationship to the removal or prevention of an established violation." Id. at 618. Nevertheless, the Court drew a distinction with respect to commercial speech remedies: "But we are dealing in this case with the government regulation of a form of speech. The First Amendment requires, we believe, an examination of the Commission's action that is more searching than in other contexts." Id. at 618-19. The Third

Circuit went on to explain the dichotomy between deceptive speech, which is not protected, and the constraints imposed by the First Amendment on the F.T.C.'s authority to prescribe remedies with respect to such practices.

> It is now well established beyond dispute that there is no commercial speech exception to the First Amendment. [citations omitted] That does not mean that an advertiser may engage in speech that is an essential part of a scheme to violate an otherwise valid law. [citations omitted] It does mean that the remedy for perceived violations can go no further in imposing a prior restraint on protected speech than is reasonably necessary to accomplish the remedial objective of preventing the violation. [citation omitted] Id. at 619.

The Court concluded: "The Commission, like any other government agency, must start from the premise that any prior restraint is suspect, and that the remedy can go no further than is necessary for the elimination of deception." Id. at 620.

In Warner-Lambert Co. v. F.T.C., 562 F.2d 749 (D.C. Cir. 1977), cert. den. 435 U.S. 950 (1978), the District of Columbia Circuit Court had occasion to review the Commission's remedial authority in the context of a corrective advertising order. The Court reaffirmed that the First Amendment "triggers a responsibility to order corrective advertising only if the restriction inherent in the order is no greater then necessary to serve the interest involved." Id. at 762. The Court held that it was not necessary for the Commission to order Warner-Lambert to begin F.T.C.-ordered corrective advertisements with the phrase "contrary to prior advertising," and ordered that language expunged from the Commission's order. Id. at 763.

The Seventh Circuit has also had occasion to clarify this issue in two recent cases. In National Commission on Egg Nutrition v. F.T.C., 570 F.2d 157 (7th Cir. 1977) cert. den. 439 U.S. 821 (1978), the Court narrowed the scope of an F.T.C. advertising disclosure order and severely limited a requirement that advertisements contain disclosures about eggs, cholesterol and heart disease because the First Amendment "does not permit a remedy broader than that which is necessary to prevent deception [citing Beneficial] or correct the effects of past deception, [citing Warner-Lambert]." Id. at 164.*/ Two years later the Court reaffirmed this limitation in Encyclopaedia Britannica, Inc. v. F.T.C., 605 F.2d 694, 972 (7th Cir. 1979), cert. den. 445 U.S. 934 (1980) stating: "A remedy for deceptive advertising which is broader than is necessary to prevent future deception is impermissible under the First amendment."

In Standard Oil Co. of California v. F.T.C., 577 F.2d 653 (9th Cir. 1978) the Ninth Circuit also recognized the constitutional limitation on the F.T.C.'s discretion to remedy misleading advertising. In that case the Commission found that Standard Oil and its advertising agency had disseminated a deceptive advertisement for gasoline and entered an "all products" cease and desist order against the respondents. The Circuit Court interceded and narrowed the Commission's order on the basis that it was overly broad and thus failed to satisfy First Amendment requirements. The Circuit Court cautioned the agency that First Amendment considerations "dictate that the Commission exercise restraint in formulating remedial orders which amount to a prior restraint on protected commercial speech." Id. at 662.

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*/ This case is of particular interest here because the court held that the F.T.C. could not require NCEN to argue the other side of the cholesterol-heart disease controversy because it amounted to "interfering unnecessarily with the effective presentation of the pro-egg position." Id. at 164

Mr. WAXMAN. Thank you. Mr. Minton.

STATEMENT OF DAVID MINTON

Mr. MINTON. I am David Minton, Washington counsel to the Magazine Publishers Association. I think the magazine which you displayed this morning showing the two-page ad from the Tobacco Institute is the same magazine which carried a two-page article on the Surgeon General's Report on Cigarette Smoking.

So, our industry, although we are interested from an economic standpoint in cigarette advertising, I believe we have fulfilled the mission to inform the public as to the issues of the day as they relate to cigarette smoking and other subjects.

I have nothing to add to what has been said except that our concern relates to the legal issue of whether that remedy you propose for the ill you perceive is effective. We believe that the evidence is fairly overwhelming that warnings labels and advertising warnings do not have the effect those who design them wish they would have. I did a one-man survey last week with a roll of Rolaids. I passed them out to my 20 colleagues in my office. Eleven of them took it without noticing what it was they were taking, other than it was a candy mint. There is a 65-word warning label on a package of Rolaids that star quarterbacks don't mention when they are advertising them.

If you are on a certain kind of diet or taking a certain kind of drug you shouldn't take Rolaids. I realize that is a different kind of subject, the over-the-counter market. But, I think it illustrates, as report after report after report illustrate, that people do not pay that much attention to warnings. They pay attention to big warnings, as Mo Udall remarked at the time of Three Mile Island. If they say that everybody within 150 miles of this place will be exterminated within the next 10 days, people pay attention. But they don't always pay attention to lesser threats.

There are many studies, one of the most recent was in the Carter administration. The Department of the Treasury and Department of Health and Human Services, in studying the problem of alcoholism, devoted a great deal of attention to the effectiveness of warnings, cigarette label warnings and advertising warnings.

The Carter administration under Secretary Califano, study came to the conclusion that there was no evidence that cigarette labeling and cigarette advertising had had an appreciable effect on the overall decline in smoking which has occurred over the last 20-year period.

So, it is our view, as defenders of the right to publish pretty much what you want, that if there is demonstrable evidence that your proposal will not work, then we hope that you will reflect at length on whether it should be enacted.

It is easy to enact a bill and say, oh, well, let the Supreme Court decide it. Maybe this will work or maybe it won't. But as defenders of all of our constitutional rights I am sure that Members of Congress are concerned about the precedential effect of passing laws to control human behavior. There is a wide variety of proposals by the many different interest groups today, regulations relating to teenagers using contraceptive devices, cigarette warnings, drug warnings, and other kinds of warning.

The warning label on a hammer was illustrated in a Department of Health and Human Services study. One hundred out of one hundred people in a test never noticed that a hammer had a label although the label on the hammer said, "Do not use this hammer."

So, if there is evidence, not just from the Tobacco Institute, but from the government itself, that labels don't work, and if there are more effective remedies you might pursue in other areas, then the Supreme Court suggests that you pursue remedies in other areas and that you do not infringe upon a constitutional right that exists under the first amendment.

That is our position.

[Testimony resumes on p. 247.]

Mr. Minton's prepared statement follows:]

TESTIMONY OF DAVID MINTON, WASHINGTON COUNSEL, MAGAZINE PUBLISHERS ASSOCIATION, BEFORE THE SUBCOMMITTEE ON HEALTH AND ENVIRONMENT ON H.R. 4957

March 5, 1982

The Magazine Publishers Association is an organization representing 188 United States publishing firms which publish nearly 800 consumer magazines. MPA represents weekly news and feature magazines, journals of literature and opinion, special interest publications in practically every aspect of human behavior, and a variety of other subjects. The American people subscribe to 250 million copies of each issue of MPA magazines.

As an organization, MPA has testified before numerous congressional committees and administrative agencies on subjects of general and specific concern to the publishing industry, and we hope that our contribution to the legislative and administrative process has been constructive. Today, we appear to present our views on the issues in H.R. 4957 which relate directly to the publishing industry.

Section 4 of H.R. 4957 requires the purchasers of cigarette advertising to include specific statements of health warnings in each publication of the advertising. This requirement is not new -- the Federal labeling requirement for cigarette packages became effective January 1, 1966, and the addition of the warning label to advertising began in 1972. Since 1972, there has been no legislative consideration of expanding the requirements of the present magazine advertising label. The rotating warnings proposed in this legislation is a far broader requirement than the current statement, however, and comes after the Supreme Court has more clearly construed the constitutional limits of permissible government regulation of commercial speech under the First Amendment. It also comes after substantial experience and research in measuring the effectiveness of warning labels, including those applicable to cigarettes. This experience plays a part in determining whether government control of commercial speech is constitutionally permissible. So, in a sense, this is a fresh atmosphere for considering the issue, and we hope that the subcommittee will weigh carefully the principles involved in light of these developments.

The Magazine Publishers Association opposes section 4 for two reasons: we think it exceeds the permissible limit of government regulation of advertising as that limit has been established by the Supreme Court of the United States, and we think that even if it were not unconstitutional, it will not achieve the goal you appear to be pursuing -- persuading people to stop smoking. If there is room to differ as to the correctness of our objection to the bill on constitutional grounds, the evidence indicating that labeling is not likely to help achieve your objectives should lead you to refrain from imposing the restraint upon free speech in the first place.

We are sure that the members of this subcommittee hold dear the constitutional rights of all citizens, and would not risk an infringement upon those rights without clear and compelling evidence not only as to the rightness of the cause, but also the wisdom of the precedent of the infringement, particularly in light of current pressures to enact legislation or approve constitutional amendments designed to regulate the behavior of citizens or overcome a Supreme Court decision.

"Commercial speech" is a term used to differentiate between speech which relates to economic interests and speech which does not. The Supreme Court in Valentine vs. Chrestensen, decided in 1942, held that the Constitution did not extend to negate a New York statute prohibiting the distribution of handbills "or other advertising matter" in any "public place." The Court said, "we are equally clear that the Constitution imposes no such [First Amendment] restraint as respects purely commercial advertising."1/ A similar conclusion was reached in

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1/ Valentine vs. Chrestensen, 316 U.S. 52 (1942).

Breard vs. Alexandria, involving door-to-door salesmen peddling without a permit. But since *Breard*, in 1951, the Court has not denied protection to commercial speech on that basis alone, and, in the words of Mr. Justice Douglas, the *Chrestensen* rule "has not survived reflection."[2]

In 1975, the Court moved sharply in the opposite direction. In *Bigelow vs. Virginia*, a Virginia statute making the newspaper advertisement of abortion referral services a crime was struck down as an unconstitutional infringement upon the First Amendment. If there were lingering doubts as to "purely" commercial speech's status under the First Amendment because the *Bigelow* case involved abortion services -- a public issue transcending mere commercial speech -- the Court's decision in *Virginia Pharmacy* in 1976 laid all doubts to rest. Justice Blackmun, speaking for the Court, defined the issue to be whether *purely* commercial speech was outside the protection of the First Amendment. "Our answer," Justice Blackmun said, "is that it is not."[3]

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[2] *Breard vs. Alexandria*, 341 U.S. 622 (1951); Justice Douglas's comment is found in *Cammaramo vs. United States*, 358 U.S. 524, at 534 (1959).

[3] *Bigelow vs. Virginia* 421 U.S. 809 (1975); *Virginia State Board of Pharmacy vs. Virginia Citizens Consumer Council*, 425 U.S. 748, 762 (1976). Subsequent decisions upholding the *Virginia Pharmacy* rule include, among others, *Bates vs. State Bar of Arizona*, 433 U.S. 350 (1979) and *Carey vs. Population Services International*, 431 U.S. 678 (1977).

The Court has nevertheless recognized legitimate avenues for regulation of commercial speech, just as there are legitimate grounds for the regulation of political speech. The Securities and Exchange Act, the Sherman Antitrust Act, and a number of other laws regulate commercial speech, but the interests of society in the positive benefits of those legislative aims have been considering an "overriding" public interest. Virginia Pharmacy itself prescribed that purely commercial speech could be regulated to be "clean" as well as "free." A clear exception to the protection of the Constitution is deceptive or misleading advertising.

In 1980, the Supreme Court defined in detail the constitutional protection of commercial speech in Central Hudson Gas. That case involved a New York State regulation which banned commercial advertising by a public utility which promoted the purchase of natural gas. Justice Powell laid out the rule to be followed to test constitutionally permissible regulation of advertising. He said,

> If the communication is neither misleading nor related to unlawful activity, the government's power is more circumscribed. The state must assert a substantial interest to be achieved by restriction on commercial speech. Moreover, the regulatory technique must be in proportion to that interest. The limitation on expression must be designed carefully to achieve the state's goal. Compliance with this requirement may be measured by two criteria. First, the restriction must

> directly advance the state interest involved; the regulation may not be sustained if it provides only ineffective or remote support for the government's purpose. Second, if the governmental interest could be served as well by a more limited restriction on commercial speech, the excessive restriction cannot survive.[4]

Mr. Chairman, we believe that the restrictions proposed in section 4 of H.R. 4957 do not meet the requirements prescribed in Hudson Gas. They do not, because the effectiveness of advertising and label warnings do not have a favorable impact upon public behavior, most particularly where personal habits are involved. Most likely, the effectiveness would be unmeasurable. Finally, the goal which you seek to achieve may be more effectively achieved by means not involving further restrictions upon the Freedom of Speech. We hope that this subcommittee's commitment to that liberty outweighs its interest in pursuing the unexplored potential of further restrictions upon commercial speech.

In determining whether the proposed restriction violates the rule so clearly enunciated in Hudson Gas, we must first determine whether cigarette advertising is free of misleading content. To mislead, as Webster defines the word, is "to lead in a wrong direction or into a mistaken action; to lead astray.

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[4] Central Hudson Gas vs. New York Public Service Commission, 100 S.Ct. 2343 (1980). Mr. Justice Rehnquist dissented in both this case and Virginia Pharmacy.

See deceive." "Deceive," Webster says, "is to cause to believe the false."

The Federal Trade Commission staff in its recent report contended that cigarette advertising is "deceptive" because it fails to provide sufficiently detailed information as to the harmful effects of smoking. That is called deception by omission. The Commission staff went to great lengths to attempt to prove this because unless they could prove deception, the FTC cannot act under current law. The staff's tactic was to concede that the public is somehow vaguely aware that smoking is "harmful" or "hazardous," but is not aware of the extent of possible harm. Various surveys in which people failed to identify correctly statistical information about smoking allegedly proved the point. So, the staff concluded, cigarette advertising deceives.

The staff's argument has several weaknesses. First of all, all but the most zealous adherents of the staff's cause would concede that the public _is_ aware of the widespread publicity about the potential harm which can result from smoking, and is made more aware every day by Government reports, newspaper articles, magazine reports and by the television news programs. This week's _Time_ devotes a lengthy article to the Surgeon General's Report.

Secondly, every FTC or judicial case used by the Commission staff to support its claims of deception involved advertisements of a very different sort, all of which made *affirmative claims*. "Wonder Bread builds healthy bodies 12 ways." Household Finance makes "Instant Tax Refunds." That is a positive claim of something good that will happen if you buy Wonder Bread or take your tax return to Household. In fact, it was not so; so the advertisements were ordered to be withdrawn.

Cigarette advertising does not make affirmative claims in regard to the effect of smoking upon health -- which is the only reason either the FTC or the Congress is involved in this matter. The *only* mention of health in any cigarette advertisement is the declarative statement "WARNING: THE SURGEON GENERAL HAS DETERMINED THAT CIGARETTE SMOKING IS DANGEROUS TO YOUR HEALTH." Cigarette advertising pictures things -- cowboys, pretty girls, and so on; but there is no claim. There *are* statements of pertinent fact: nicotine and tar content, determined under FTC standards. There are also claims that the brand advertised "tastes better," which is a matter of opinion. In recent years, tar and nicotine content have become a major advertising feature for most brands, and perhaps a reason for switching brands. That in itself demonstrates public awareness. Cigarette manufacturers no longer advertise the cigarettes which an older generation remembers. Not a dime is spent on plain old Camels, Luckies, or Chesterfields, although people who prefer those brands continue to buy them.

An advertisement which makes no affirmative claim to anything and which has a health warning in plain sight and plain words is not deceptive, and therefore is within the boundary of protection for commercial speech prescribed by the Supreme Court.

The second issue is whether the remedy proposed is likely to be effective, or whether the results will be ineffective or remote, thereby failing the Court's standard.

The FTC staff concluded that the current cigarette label is ineffective, apparently because everybody hasn't quit smoking. Since it appears that the goal is the elimination of cigarette smoking in the United States, there may be many programs which would fail to meet the staff's test. Advertising labels may be one of them, but the claim that the public is not aware defies common sense and the Surgeon General's most recent report. The 1982 Report of the Surgeon General showed that today 53 million people smoke, about the same number as 20 years ago. That is a significant decline in the percentage of the population. There were about 180 million people in the United States in 1962, and there are about 230 million today. The percentage of adult smokers has dropped from 42% to 33%. Public attitudes have changed; medical advice has changed. Radio and television advertising is no longer available.

In testing whether H.R. 4957 complies with the standards set out in Hudson Gas, the relevant question is whether increased restrictions will have a direct impact upon achieving the legislative goal. We believe that the correct answer is either "no" or "nobody knows." In either case, we believe that the prudent advocate of constitutional freedom should refrain from restraint upon free speech rather than impose further questionable restrictions.

Recent studies of the effectiveness of warning advertisements and labeling show that the public tends to ignore them. In their November, 1980 Report to the President and the Congress, the Departments of the Treasury and Health and Human Services found that "the public generally is 'over warned' by the Government" and that the effectiveness of warning declines as the degree and frequency of warnings increase. Personal attitudes, experience, and habit play a highly significant role in determining whether a person pays attention to warnings, regardless of the consequences. The Report specifically found that "fear statements" are "generally not as effective... and may cause the audience to feel overly threatened and, as a result, screen out the message."[5] The "size" of the problem is related to the effectiveness of the warning, too. Many people switched from aerosol spray cans to carbon dioxide spray cans when alerted to aerosol's threat to the level of ozone in the stratosphere. Residents near Three Mile Island moved out quickly. The widespread fear of strontium 90 in cow's milk was a significant factor in public support for banning nuclear testing in the atmosphere. Those are big threats -- of almost incomprehensible proportions -- which appear to threaten life on earth. As Representative Udall remarked at the time of Three Mile Island, enemies you can't see, feel, or hear, arouse a deeper fear than others.

When it comes down to the personal level, the effectiveness of warning is significantly lower. It is perhaps a charming aspect of the American character that most people don't believe what the newspapers or the government says. The regulation of personal behavior, particularly personal habits, is extremely difficult. Many manufacturer warnings or instructions do not appear to work. Controlled experiments illustrate the problem. One experiment involved the use of hammers -- the device you drive nails with -- which had been carefully labelled to warn of danger, or to instruct the user not to use the tool at all. One hundred high school and college students were asked to use the hammers to drive nails in pieces of wood. They all did, and following the experiment, all were asked what the labels said. Not one out of 100 had even noticed the labels.6/

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[5] Report to the President and the Congress on Health Hazards Associated with Alcohol and Methods to Inform the General Public of these Hazards, U.S. Department of the Treasury and U.S. Department of Health and Human Services, November, 1980.

Everyone knows how to spell relief. Not everyone knows that the label of that famed over-the-counter antacid contains a 65-word warning as to the dangers involved in eating that tasty mint.

Observe passengers on any flight and see how many pay any attention whatever to the verbal safety instructions of flight attendants. In actual emergencies involving the necessity for using oxygen masks, passengers generally are at a loss, including business travelers most frequently exposed to the instruction.

It is an interesting problem. Automatic seat belts, required on all American cars in the mid-1970s, were so unpopular with the American people that Congress repealed the requirement, despite overwhelming evidence as to the effectiveness of the belts, and the failure of people to use seat belts which require personal fastening. Perhaps we all believe in our own indestructibility, our own immortality on earth. Whatever the reason, in personal matters -- don't smoke, don't

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6/ Journal of Products Liability, 1977, Vol. 1, pp. 255-259.

drive when you're drinking, don't jaywalk -- admonitions of the consquence, regardless of the evidence, don't have much effect. In the specific instance of the Government's 15 year campaign to persuade people to quit smoking, the 1980 Treasury/HHS Report concluded that "it is impossible at this time to isolate the impact of any specific communication technique on smoking behavior."[7/]

To extend further restrictions upon the freedom to advertise a commodity the manufacture, sale, and consumption of which is legal in every State in the Union does not, in our judgment, do justice to the rule of law, particularly in the presence of evidence that this legislative remedy would not be effective. It might be easy to recommend the enactment of this legislation and then see what happens. Maybe the Supreme Court will declare it unconstitutional, maybe it won't. In matters affecting personal liberties, this would not be the first time. In 1962, Congress enacted legislation prohibiting the importation of any "Communist political propoganda" which would infect the minds of the American people. The sponsor of that bill -- no longer here -- dismissed his critics with a wave of the hand and the suggestion that

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[7/] Treasury/HHS Report, page 38.

if they opposed it, take it to the Supreme Court. They did, and they won. It is our hope that every advocate for the preservation of cherished although not always popular freedoms does not have to resort to litigation to preserve those rights.

There are other areas of concern where legislation would prove effective. Should Congress require the Administration to enforce the 55 mile-per-hour speed limit? There is overwhelming evidence of the direct relationship of speed to traffic deaths. Fifty thousand people died in traffic accidents last year, most of them as the direct result of speed, yet Congress appropriated no funds in FY 1982 to enforce the statutory speed limit. That very real problem involves no constitutional question. The Supreme Court has prescribed no rule. But in the case of further restrictions upon commercial speech, the Court has, and in our opinion H.R. 4957 transgresses that rule. We hope that you will reconsider. We hope, as Justice Douglas put it, that the advertising restrictions proposed in section 4 "will not survive reflection."

Mr. **Waxman**. Thank you very much.

Mr. Minton and Mr. Rubin, you are both attorneys, is that correct, representing the Outdoor Advertising people and the Magazine Publishers?

Mr. **Minton**. Yes.

Mr. **Rubin**. Yes.

Mr. **Waxman**. Mr. Waterson, you were referred to as Dr. Waterson.

Mr. **Waterson**. I think that was a mistake. Actually I am Mr. Waterson. I have two degrees but one of them is not a doctorate.

Mr. **Waxman**. You are research director of the Advertising Association, you have been involved in research on advertising and its effect?

Mr. **Waterson**. Yes. We have been through these questions in Europe many, many times over the past 5 years. They have been rather more current in Europe than they have here.

So, I have a great deal of evidence at my disposal which maybe has not been worked on in the States.

Mr. **Waxman**. Mr. Minton, you referred to this Newsweek magazine.

Mr. **Minton**. Time is the magazine I was referring to, but if it was Newsweek——

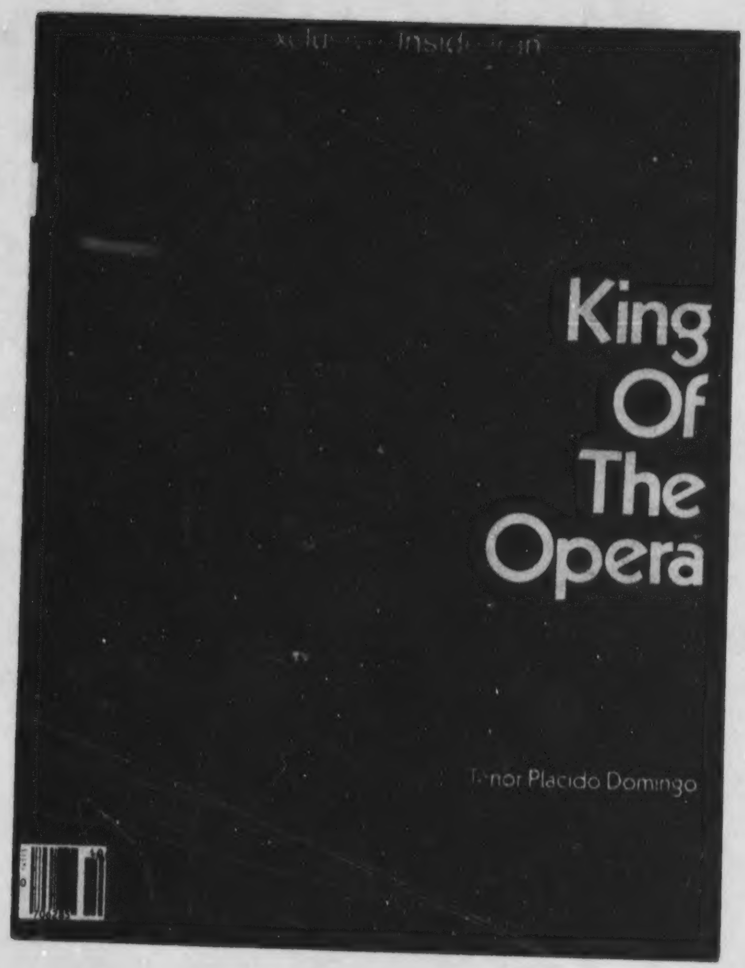
Mr. **Waxman**. I thought you referred to Newsweek.

Mr. **Minton**. I am sorry. I didn't see the cover of the magazine this morning but I am familiar with both the Newsweek and Time articles——

Mr. **Waxman**. The March 8, 1982, issue of Newsweek contains a story on the Surgeon General's recent warning about the health effects of smoking. "The risks associated with smoking, the most important public health issue of our time."

There is a box on page 89 with the picture and text of the article. In the same issue of Newsweek I noted that there are no fewer than six full-page color ads promoting various brands of cigarettes. I would like to put the article referred to by Dr. Koop as well as the ads in the record. Without objection that will be the order.

[The material referred to follows:]


King
Of
The
Opera
Tenor Placido Domingo

MEDICINE

The Hazards of Marijuana

How dangerous is marijuana? The question has been hotly debated by the [illegible] since [illegible] the nation's most widely used illicit drug. Last week a [illegible] panel of the National Academy of Sciences' Institute of Medicine issued the most comprehensive and [illegible] report to date on the health effects of marijuana. The committee concluded that the drug is far from harmless and its use "justifies serious national concern." However, said the panel, much more research will have to be done to prove the dire warnings of pot's most vociferous critics.

The study was designed to be impartial. Commissioned by the National Institutes of Health, it was carried out by 22 "independent" experts. Over fifteen months the committee pored over almost everything published on marijuana—from its effects on [illegible] to its uses in the treatment of glaucoma. But among the findings that [illegible] committee members the most was how little is really known about marijuana. "The committee considers the research particularly inadequate," said the report.

Teens. The pervasive use of marijuana among youngsters was a major impetus to the study. In 1979 at least 50 million people had tried pot at least once. "More high school seniors smoke pot daily than drink alcohol," the report noted. The committee took some comfort in a report issued last week by the National Institute on Drug Abuse that suggests that marijuana use among teen-agers has leveled off recently. The proportion of seniors who smoked pot every day, NIDA found, dropped from 11 percent in 1978 to 7 percent last year.

The NAS study [illegible] effects of marijuana. The drug [illegible] and motor coordination, [illegible] the wheel of a car. These effects may last for up to eight hours after the [illegible] "high" has disappeared [illegible] daily users [illegible]. "[illegible] the implications for [illegible] children are especially serious," said Dr. Arnold S. Relman, editor of The New England Journal of Medicine and head of the committee.

The effects of marijuana depend on the size of the dose and the psychological state of the user. The report linked pot with apathy and decline in school performance—the so-called "amotivational syndrome." Whether the drug causes the syndrome or youngsters prone to the disorder tend to be more [illegible] smokers, [illegible] a cause-and-effect relationship can't be established. In addition, marijuana can trigger mental symptoms ranging from confusion to delusions and may exacerbate underlying mental illness.

Still, the report fails to support some of the more extreme views of the anti-pot lobby. The committee found no convincing evidence that marijuana produces permanent damage to the central nervous system and brain. Nor is it addictive in the same manner as narcotics. Tolerance develops rapidly, and withdrawal symptoms, including irritability and insomnia, are relatively mild and temporary.

[illegible]

Smoking pot: A matter of concern

As for physical effects, marijuana resembles tobacco smoke in its action on the respiratory tract. Heavy use can produce chronic bronchitis and even precancerous changes in the lining of the bronchial tubes. Although long-term studies have yet to be done, the committee warned that pot smoking could cause lung cancer. Smoking marijuana also results in [illegible] effects on the circulatory system, increasing the heart rate and blood pressure.

Fertility. The evidence that marijuana is a threat to reproductive function and the unborn is inconclusive. The drug decreases the number and motility of sperm among men who use it heavily, but there is no evidence that fertility is affected. The panel attached no clinical significance to chromosome abnormalities found in some smokers.

The committee did find some positive things to say about marijuana as a medicine. The drug seems to be highly effective in the treatment of glaucoma and the control of nausea and vomiting in cancer patients receiving chemotherapy. Pot also dilates the bronchial tubes and may prove useful in the treatment of asthma.

However, the report stressed the hazardous possibilities of marijuana use. "The absence of evidence does not mean there are no long-term effects," Relman warned. The Academy was sharply critical of reduced federal funding for marijuana research in the last three years, saying that they ironically coincide with an increased public concern. "We are well aware of the financial constraints," said Relman. "The taxpayers will have to decide whether they want to pay the price of ignorance."

—[illegible] CLARK with MARY HAGER in Washington

Smoking: Bad News

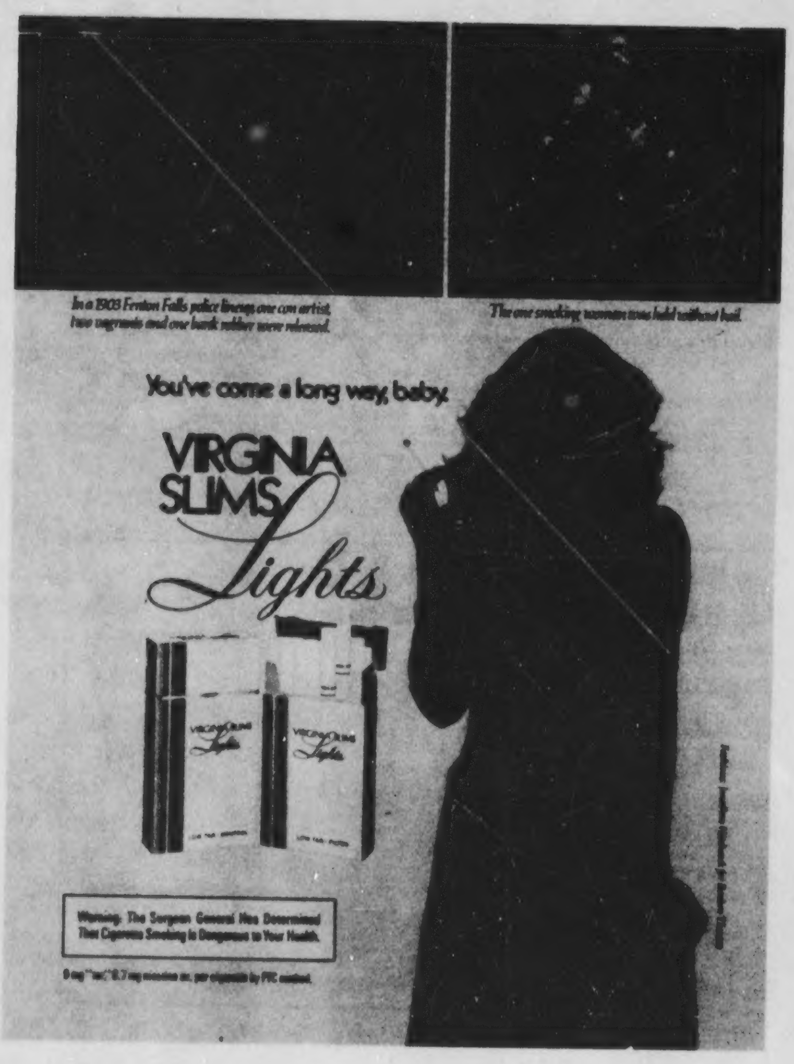
The U.S. Surgeon General takes the podium each winter to issue the latest chilling news about the health effects of smoking. [illegible]

[illegible] third of the 430,000 cancer deaths each year in the United States can be blamed on the habit, Koop declared. Not only is smoking the major cause of lung cancer—now the nation's leading killer—but it also triggers malignancies of the larynx, mouth and esophagus. In addition, it is a "contributory factor" in cancers of the bladder, kidney and pancreas. Smokers even suffer an "excess mortality" from cancers of the stomach and cervix. While the evidence isn't conclusive, at least two surveys suggest that nonsmokers who inhale other people's smoke have an increased risk of lung cancer. "Prudence dictates that nonsmokers avoid exposure to secondhand tobacco smoke to the extent possible," said an introduction to the report.

But the Surgeon General did sound a few upbeat notes. [illegible] percent [illegible] of adult Americans now smoke than in 1965, the year after the first report. The rate has also dropped recently among teen-agers, and the per capita consumption of cigarettes is the lowest since 1957.

Koop: Grim warning [illegible]

[illegible]



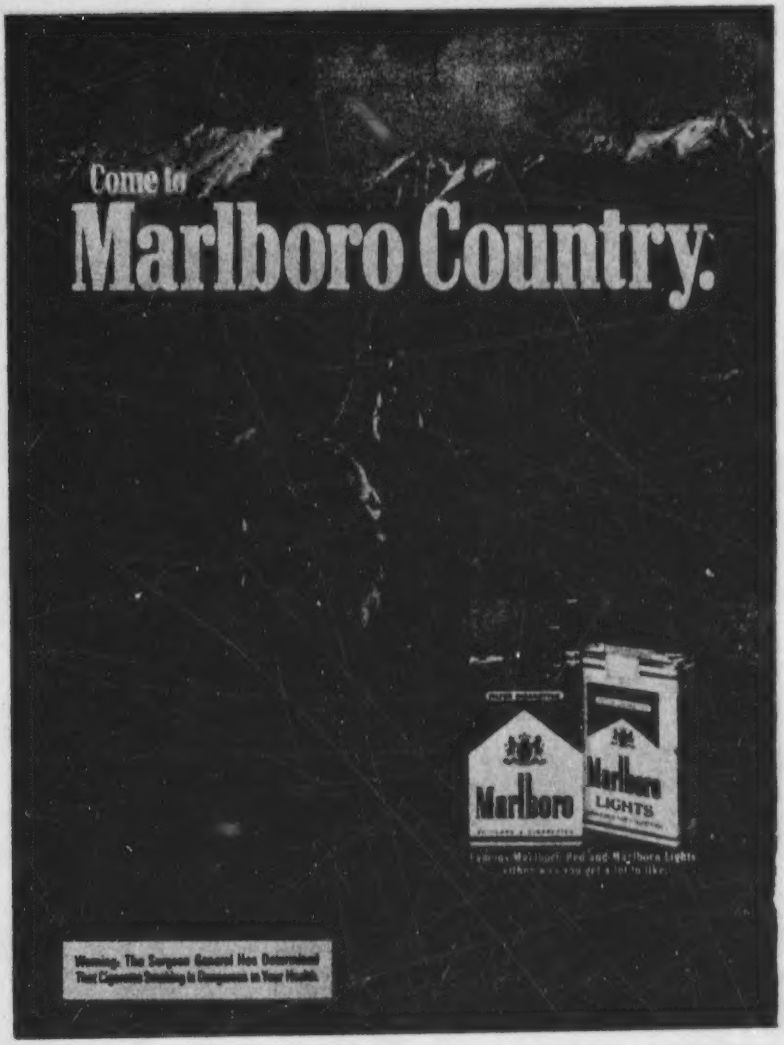
In a 1903 Fenton Falls police lineup, one con artist, two vagrants and one bank robber were released.

The one smoking woman was held without bail.

You've come a long way, baby.
VIRGINIA SLIMS Lights
VIRGINIA SLIMS Lights
VIRGINIA SLIMS Lights

Warning: The Surgeon General Has Determined That Cigarette Smoking Is Dangerous to Your Health.

9 mg "tar," 0.7 mg nicotine av. per cigarette by FTC method.

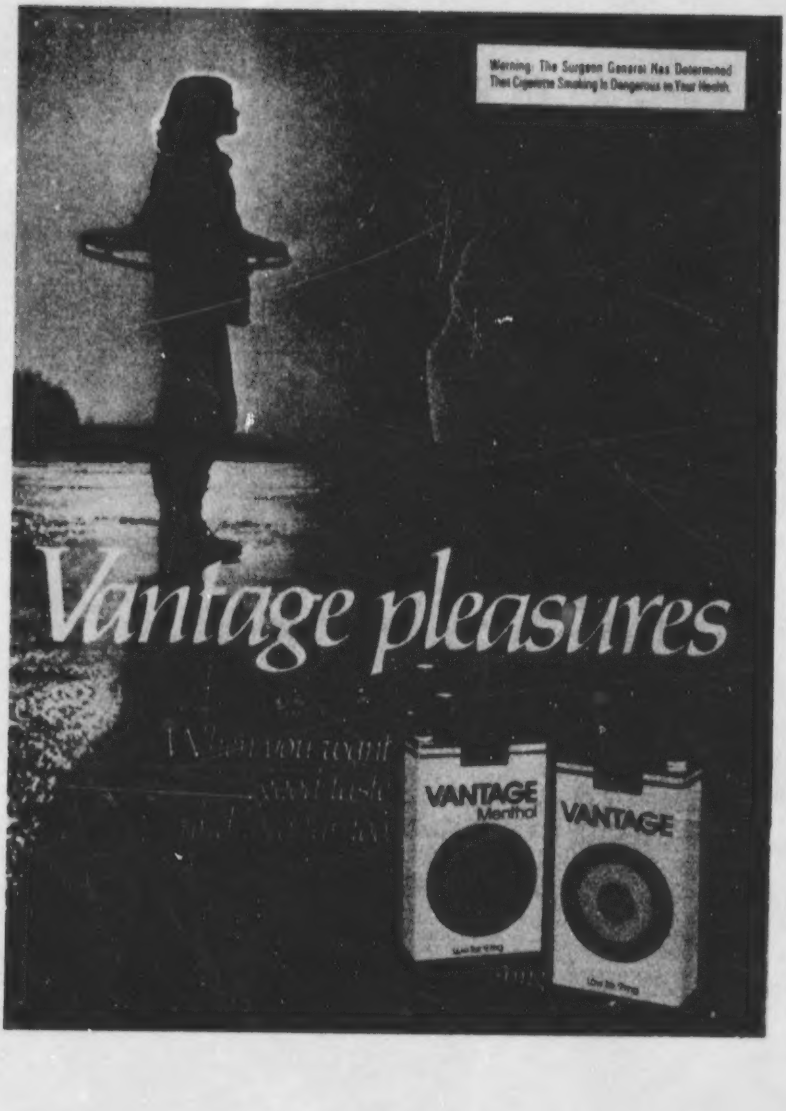


Come to

Marlboro Country.

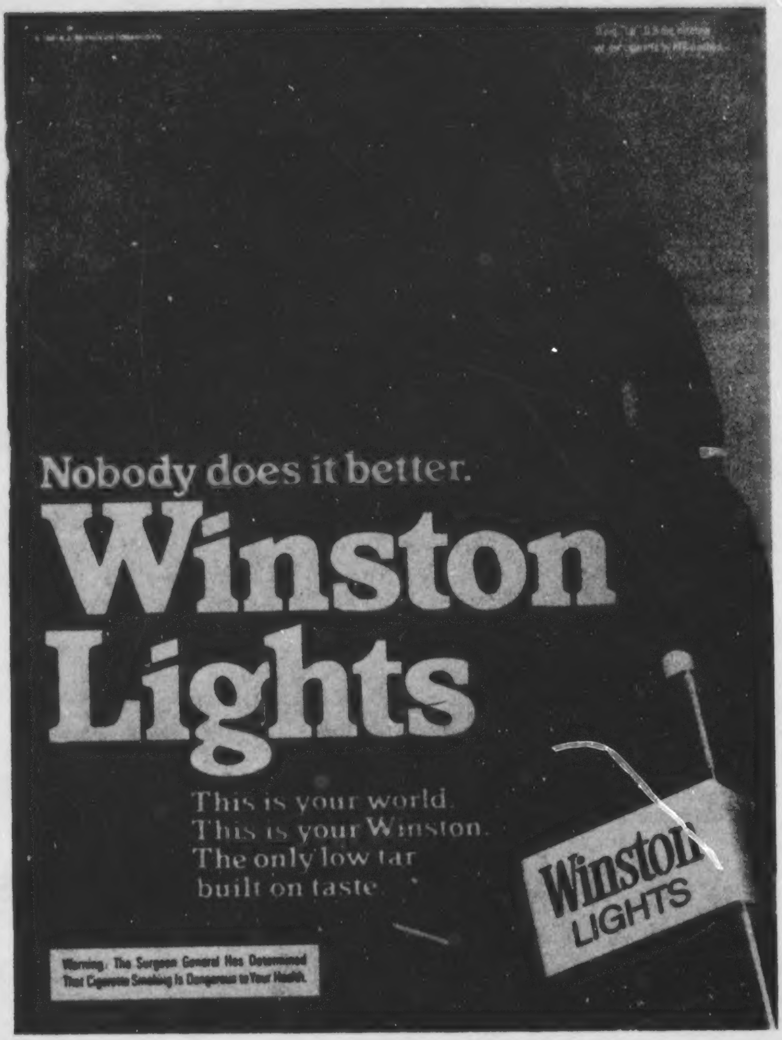
Famous Marlboro Red and Marlboro Lights — either way you get a lot to like.

Warning: The Surgeon General Has Determined That Cigarette Smoking Is Dangerous to Your Health.



Warning: The Surgeon General Has Determined That Cigarette Smoking Is Dangerous to Your Health.

Vantage pleasures
When you want
good taste
[illegible]
VANTAGE Menthol
VANTAGE



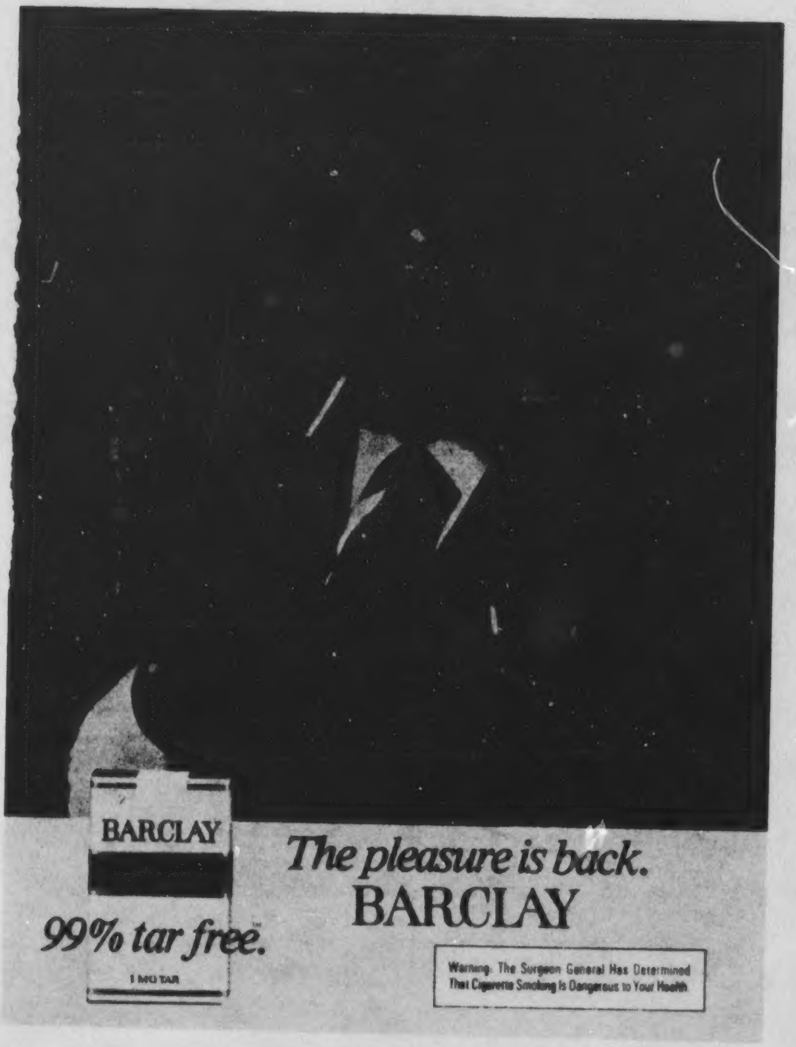
Nobody does it better.

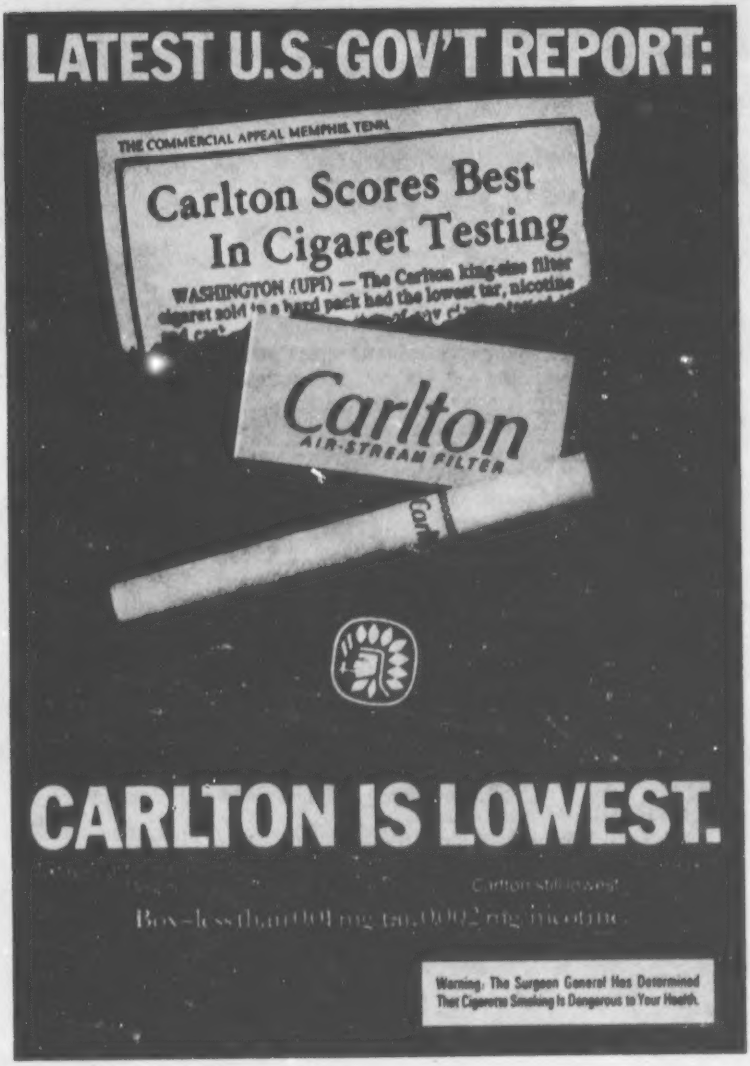
Winston Lights

This is your world.
This is your Winston.
The only low tar
built on taste.

Warning: The Surgeon General Has Determined
That Cigarette Smoking Is Dangerous to Your Health.

Winston
LIGHTS


BARCLAY
1 MG TAR
99% tar free.™
The pleasure is back.
BARCLAY
Warning: The Surgeon General Has Determined That Cigarette Smoking Is Dangerous to Your Health



LATEST U.S. GOV'T REPORT:

THE COMMERCIAL APPEAL MEMPHIS TENN.

Carlton Scores Best In Cigaret Testing

WASHINGTON (UPI) — The Carlton king-size filter cigaret sold in a hard pack had the lowest tar, nicotine

Carlton

AIR-STREAM FILTER

CARLTON IS LOWEST.

Carlton still lowest.

Box—less than 0.01 mg tar, 0.002 mg nicotine

Warning: The Surgeon General Has Determined That Cigarette Smoking Is Dangerous to Your Health.

Mr. **WAXMAN**. The first ad is from the Phillip Morris Co. for Virginia Slims. It portrays the Virginia Slims woman as the highly attractive woman of today. She's come a long way.

Another shows a young couple ice skating. Dusk has settled and it is time for "Vantage" pleasures. The question is how much of an impact can the Surgeon General's warning have against this kind of competition and how can those concerned about public health compete with the daily barage of cigarette ads associating smoking with the vigorous attractive healthy lifestyle?

Mr. **MINTON**. I guess I am best qualified to say that I am not an expert in either field and don't feel competent to answer as a professional witness. As a citizen, I suppose it stands as a monument to free press, that you can persuade people to buy advertising in your magazine at the same time that you print articles reporting as to the adverse effects of buying the product.

Mr. **WAXMAN**. You and Mr. Rubin claim there are perhaps first amendment problems if we pass this legislation due to prior restraint on speech. What speech is being restrained? It seems there is a requirement being added. There is a warning label requirement already in law. What restraint is there that violates the first amendment?

Mr. **MINTON**. It is a further restrainting upon commercial speech which has a constitutional protection defined under Supreme Court decisions. In the last 6 years, there have been a half-dozen or so Supreme Court decisions that have clarified that pure commercial advertising is entitled to protection under the first amendment. You have examples of cases of a complete ban upon advertising, or a limited ban on advertising, or requirements of specific kinds of advertising. It is not my position as a lawyer that your bill is unconstitutional. It is my position that your bill raises an issue that I think is within the boundary of constitutional protection. The Hudson Gas Co., case in which the Court laid down the guideline that, if your remedy does not appear to be effective, and if there are other methods that you might pursue that would be effective, then the imposition of the restraint upon free speech may be unconstitutional.

Mr. **WAXMAN**. Do you know whether the requirement that ads for cigarettes have this warning label, which has been the law for I guess around 10 years, whether that has been challenged in the courts, or whether the prohibition against advertising on television has been challenged in the courts and whether either has been challenged successfully?

Mr. **RUBIN**. Let me just answer——

Mr. **WAXMAN**. I include in that question—go ahead.

Mr. **RUBIN**. No, if you have more——

Mr. **WAXMAN**. I mentioned the restrictions on advertising apply to both magazines and outdoor advertising. Have you filed a lawsuit yet on behalf of the Outdoor Advertisers?

Mr. **RUBIN**. Let me answer you this way. The whole issue of whether commercial speech is protected by the first amendment has only really recently been articulated by the Supreme Court. There is no way to challenge the issue that you raise. There would be no history because it was only articulated several years ago for the first time. But there has been at least one case on it every year from the Supreme Court. Central Hudson is the most recent——

Mr. **Waxman**. You haven't filed any lawsuits? You haven't challenged the constitutionality of the present restrictions?

Mr. **Rubin**. I have no reason to.

Mr. **Waxman**. But you would have reason if the rotating label system was passed or if the label were of a different size or the warning a different substance? Do you think that would trigger the boundaries between what is constitutional and what is not?

Mr. **Rubin**. As Mr. Minton says, you start from a base level of what now exists. And the proscription is on additional restraints in a context where they are not the least—they are not the least restrictive means. And the least restrictive means is the test. The question is whether, if you are not going to achieve anything more with the new imposition on protected speech, the question is whether that is valid under the first amendment.

Mr. **Waxman**. Do you have any opinion you would offer?

Mr. **Rubin**. I think I testified that I think it comes within the area where there is substantial question.

Mr. **Waxman**. Do any of you have anything to offer to us by way of either your expertise or knowledge on the allegations about the dangers of smoking? Is that beyond your competence?

Mr. **Minton**. It isn't the subject of my testimony. Our objection to your bill is directly related to provisions of section 4 regarding imposition of restrictions on advertising.

Mr. **Waxman**. Mr. Waterson, you raised the notion that this new restriction will have the impact of forcing cigarette manufacturers to stop advertising. Then you claimed that would be unfortunate because, among other reasons, the advertising of low-tar and nicotine cigarettes would not be available to the public.

Is that a correct statement?

Mr. **Waterson**. I didn't say it would force them to stop. I merely suggested any increase in regulated activity would probably decrease the effectiveness of brand advertising. That is my belief.

Mr. **Waxman**. Of brand advertising.

Mr. **Waterson**. Yes.

Mr. **Waxman**. I see. And is it your opinion that there is a public value to having brand advertising because of the low-tar and nicotine content of one brand versus another?

Mr. **Waterson**. The governments throughout the Western world have tired to encourage low-tar advertising. Certainly in Europe and, I believe, in this country as well.

Mr. **Waxman**. We have had some testimony this morning from some emminent medical professionals and researchers who seem to indicate that there may be a problem with carbon monoxide. Carbon monoxide is associated with heart disease, higher risks to pregnant women and is present in high amounts in many low-tar nicotine cigarettes.

Is that something with which you are familiar?

Mr. **Waterson**. All I would say is that every government, to my knowledge in Western Europe, has tried to encourage the consumption of low-tar nicotine cigarettes at the expense of high-tar nicotine cigarettes.

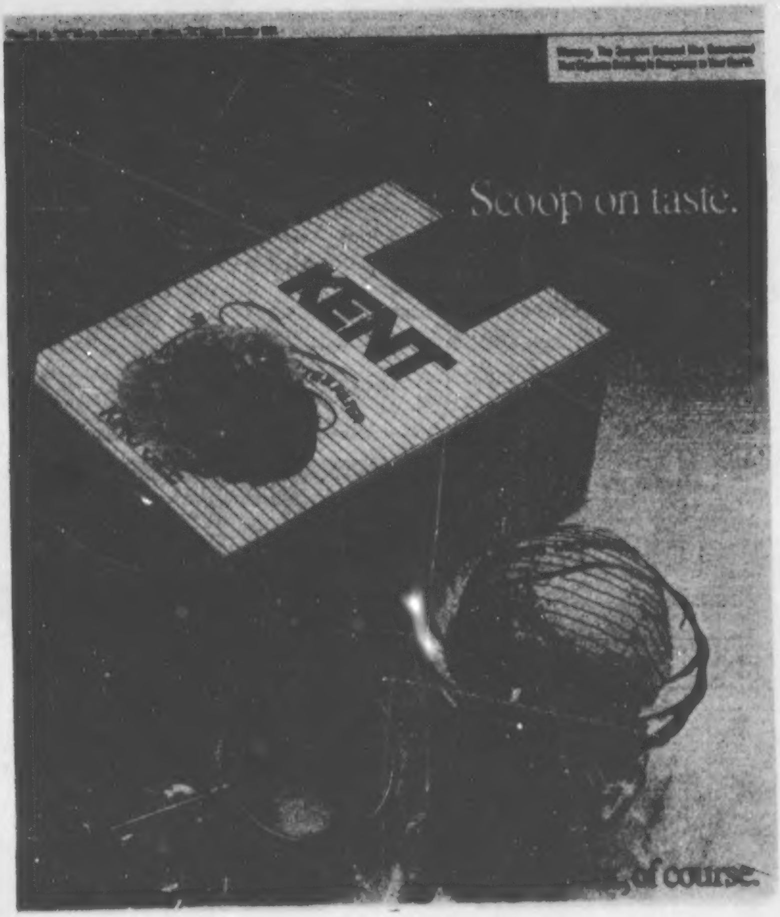
I do not know much about carbon monoxide levels but I do believe the official government position in Europe is that, as I stated, low-tar is better.

Mr. WAXMAN. So, your argument is that because other governments try to encourage this, that we should take that into consideration and weigh it against what scientists are now telling us?

Mr. WATERSON. No, that is simply the limit of my knowledge.

Mr. WAXMAN. Simply the limit of your knowledge. Now, I want to show you an ad from the New York Times magazine. I can show it from here. If you want a closer look, we will be glad to bring it to you. It is an advertisement, a copy of which we will make available for the record. It is a picture of ice cream and Kent cigarettes.

[The advertisement referred to follows:]


Scoop on taste.
KENT
of course.

Mr. WAXMAN. I assume you are familiar with the kinds of themes advertising people think about to encourage the public to buy their product. What major themes do you think are present in this ad and what information of value does the manufacturer or ad agency tend to convey to the public. Do you think they are saying smoking is as wholesome as eating ice cream? Are they trying to say to people that if they stop smoking they will get fat?

Mr. WATERSON. My expertise is limited to highly detailed knowledge of the effect of advertising on consumption levels throughout many product areas. I have no idea what went through the mind of the advertiser when he made up the advertisement.

Mr. WAXMAN. Do you think advertising plays a role in increased smoking by young people?

Mr. WATERSON. Every shred of evidence we have, and you have a copy of my monograph on the subject in your record, suggests that this is not so. There is no evidence at all to my knowledge throughout Europe or indeed in the States to suggest that advertising encourages young people to smoke.

Mr. WAXMAN. Do you think advertising a product makes it more likely that people who are the target of the advertising are more likely to buy a product?

Mr. WATERSON. I simply think it is impossible for advertising to stimulate the consumption of all products simultaneously. Young people are sold drinks and 1 million other products. I think it is slightly naive to think they can be sold all these things simultaneously and consume all of them more as a result of advertising.

Mr. WAXMAN. In a hearing of our own Subcommittee on Oversight and Investigations there was a quote from a report by the Ted Bates Advertising Agency obtained by the Federal Trade Commission. It states:

> For the young smoker the cigarette is not yet an integral part of life, of day-to-day life, in spite of the fact that they try to project the image of a regular, run-of-the-mill smoker. For them, a cigarette and the whole smoking process, is a part of the illicit pleasure category . . . In the young smoker's mind a cigarette falls into the same category with wine, beer, shaving, wearing a bra, or (purposely not wearing one), declaration of independence and striving for self-identity. For the young starter, a cigarette is associated with introduction to sex life, with courtship, with smoking "pot" and keeping late studying hours.

Wouldn't one tend to think that this proposed advertising campaign was targeted to a particular group, particularly teenage girls, who appear to be taking up smoking at a faster rate? In effect they are proposing to target not just to a brand, as you said in your testimony, but to taking up a new habit?

Mr. WATERSON. I have been connected with advertising for 15 years, products like drink, particularly, in your suggestion, targeted to young people. I have never once seen any campaign include a statement to the effect that there was a desire or hope of increasing the total market for that product by brand advertising.

If slim kings sell more, somebody else sells less. It is as simple as that in my belief.

Mr. WAXMAN. You indicated Sweden has had a number of label changes but has had no decrease in smoking cigarettes. Would you furnish for us for the record your data?

Mr. **Waterson**. I can give you the total consumption levels in Sweden which show no drop after imposition of 16 health warnings. I can give it back as far as you like. I don't have it with me but I can furnish it.

Mr. **Waxman**. How long has Sweden had that warning label requirement?

Mr. **Waterson**. I am not clear of precisely how long.

Mr. **Waxman**. If it were only a few years would you think perhaps it is too early to make a conclusion?

Mr. **Waterson**. I can submit—I have under my, in my files data on literaly maybe 50 different countries. I can submit it with the date. I can't remember pricisely what it shows. I do know in all of Scandinavia there is no evidence to suggest that either the imposition of health warnings or indeed massive state campaigns against smoking, as in Norway, has had any impact on total levels of consumption.

In Norway the situation has most clearly shown where they have spent in United Kingdom terms, 20 million pounds, $40 million, you multiply that by 5 in U.S. terms, over $100 million over a period of 5 years. This has not had the impact of decreasing consumption.

Mr. **Waxman**. How do you explain the decrease in cigarette consumption in this country everyone seems to acknowledge if it is not due to greater awareness of the dangers of cigarette smoking due to anticigarette campaigns, warning labels, and more press information?

Mr. **Waterson**. I am not saying that isn't the reason for it. I am simply saying specifically information on labels and specifically the Norwegian campaign had no impact. I do believe in the United Kingdom for example, the theme of newspapers, bombardment of health campaigns and so on, has had an effect. I don't believe the warnings specifically have been shown to have any effect at all. They are ignored because the smoker chooses to ignore them by and large. No matter how many you have.

Mr. **Waxman**. But you do acknowledge the fact that there has been a decrease in cigarette smoking in the United Kingdom, and also here. How do you explain it?

Mr. **Waterson**. Because of the bombardment of health information over the past 10 or 15 years I presume.

Mr. **Waxman**. Do you think peoples' knowledge comes only from one specific source and that there is not a growing awareness as they are confronted with claims and arguments from a variety of different sources?

Mr. **Waterson**. Research evidence suggests to me people don't read the packs. That is all. I do believe that they take in over a period of years the health campaigns that have been launched at them in this country and in the United Kingdom. They apparently have not at all in Norway.

Mr. **Waxman**. Do you think we would be more effective if we mandated counter-advertising of cigarette smoking?

Mr. **Waterson**. I do not know because I have no data based on counter-advertising campaigns except in Norway. I am clear. The situation here is very different from Norway. In Norway the specific campaign does not appear to have had any impact at all as opposed to the sorts of articles my colleague referred to.

Mr. **WAXMAN**. If you can sell a product by advertising, why can't you reach people with information about the dangers of that product by advertising?

Mr. **WATERSON**. As I explained in my testimony it is very much easier to sell a single brand, to get a brand trial is a very much simpler thing than to attempt to modify human behavior which is an enormously complicated subject. It is very difficult to do as in drink moderation campaigns, for example. It is very difficult to get across concepts of that sort. At least it is much more difficult.

Mr. **WAXMAN**. If there is a difficulty in getting across a message, is the best way to approach that problem by abandoning any effort? Or, to try to be as effective as you can, to reach as many people as you can?

Mr. **WATERSON**. I think you have to depend on the research evidence and I think that research evidence shows that the bill as composed is extremely likely to be ineffective.

Mr. **WAXMAN**. What would be effective?

Mr. **WATERSON**. I have no idea, in this country. I think in the United Kingdom the continuation of the present situation as it is is proving effective. In this country——

Mr. **WAXMAN**. Is that based on the high price of cigarettes? Am I correct in assuming from what you have said earlier that the effectiveness of discouraging smoking in the United Kingdom is based to a great degree on the high price of cigarettes?

Mr. **WATERSON**. That is difficult to say. In the short-term, certainly if you increase the price you will decrease consumption. In the long-term we don't have enough evidence to suggest that that consumption decline won't go back next year. There is also the problem one can see from Norway, where you attempt to control the product by that, jacking up the price 40 to 50 percent, you encourage people to import illegally. In Norway, 30 percent of spirits consumption is illegally distilled which is in itself a considerable health hazard. Thirty percent of the spirits consumed in Norway, this is a Government estimate, not mine, again I can furnish details.

Mr. **WAXMAN**. I missed the point of that.

Mr. **WATERSON**. Attempts to control consumption levels by massive price increases or advertising bans and so on.

Mr. **WAXMAN**. I see. Certainly the free market system indicates if you want a product and have to pay a high price in one place you will go to a place where you can pay a lower price.

Mr. **WATERSON**. Exactly, that is my point.

Mr. **WAXMAN**. That is reasonable to expect. I go to you as an expert in advertising and say we have a big public health problem in this country. People are dying of cancer and lung disease and heart disease. It appears to be that cigarettes are a leading cause. What would you recommend to me as an advertising expert knowing how to sell things to people? Your answer would be——

Mr. **WATERSON**. This really isn't my field at all but I would suggest that as a purely personal impression, I think Captain Kangaroo is right. That you need more education.

Mr. **WAXMAN**. Mr. Bliley.

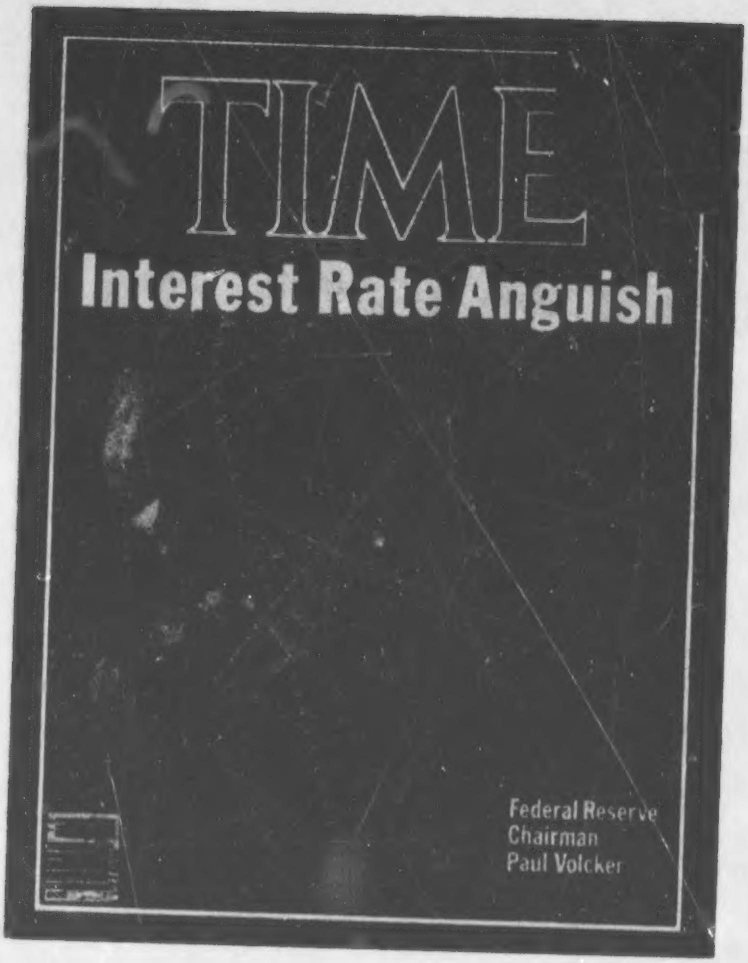
Mr. **Bliley**. Thank you, Mr. Chairman. Thank you very much, gentlemen.

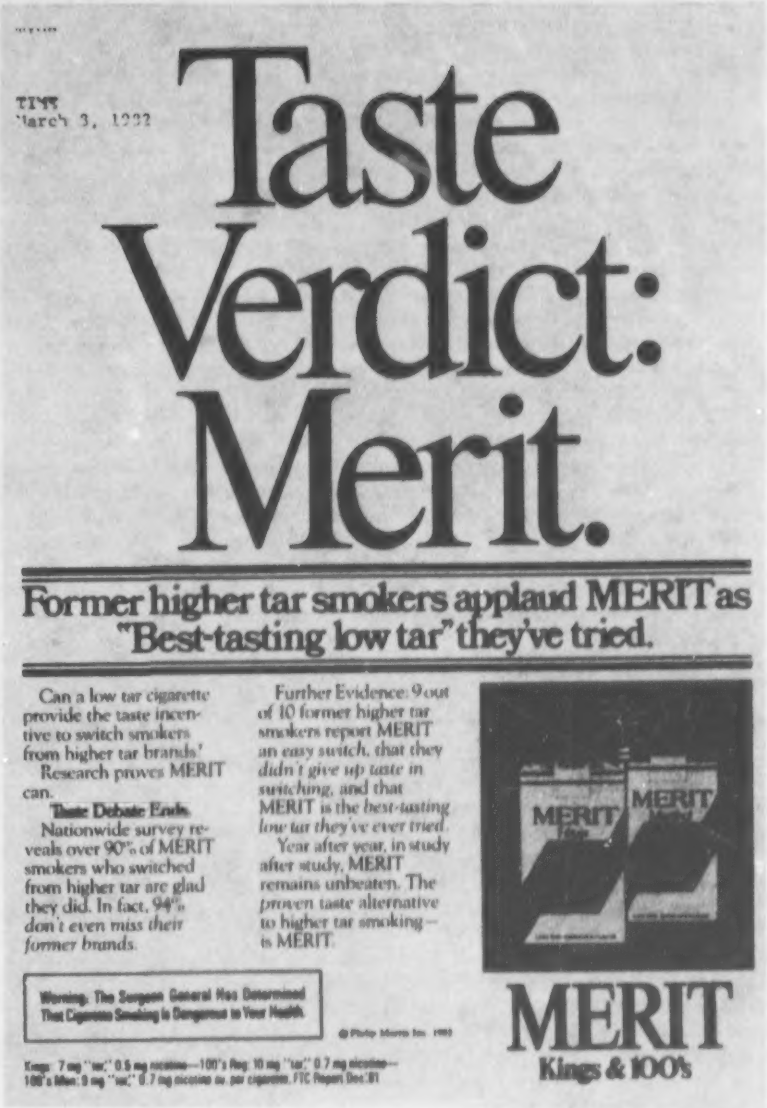
Since we gave Newsweek an opportunity Mr. Chairman, I ask unanimous consent we include in the record a report from the Surgeon General that was in Time on March 8. It tends to confirm a lot of what you have said, Mr. Waterson. And I will quote one passage from it. "Surprisingly, 95 percent of the people who broke the smoking habit did so without the help of organized programs."

Mr. **Waxman**. Without objection we would like to make the article from the March 8, 1982 issue of Time Magazine on the Surgeon General's report, as well as, I am sure the gentleman wouldn't disagree, as well as all cigarette advertisements in that issue, a part of the record.

Mr. **Bliley**. Certainly.

[The article and advertisements referred to follow:]


TIME
Interest Rate Anguish
Federal Reserve
Chairman
Paul Volcker



TIME
March 3, 1982

Taste Verdict: Merit.

Former higher tar smokers applaud MERIT as "Best-tasting low tar" they've tried.

Can a low tar cigarette provide the taste incentive to switch smokers from higher tar brands?

Research proves MERIT can.

Taste Debate Ends.

Nationwide survey reveals over 90% of MERIT smokers who switched from higher tar are glad they did. In fact, 94% *don't even miss their former brands.*

Further Evidence: 9 out of 10 former higher tar smokers report MERIT an *easy switch,* that they *didn't give up taste in switching,* and that MERIT is the *best-tasting low tar they've ever tried.*

Year after year, in study after study, MERIT remains unbeaten. The *proven taste alternative* to higher tar smoking—is MERIT.

MERIT
Kings & 100's

Warning: The Surgeon General Has Determined That Cigarette Smoking Is Dangerous to Your Health.

© Philip Morris Inc. 1982

Kings: 7 mg ''tar,'' 0.5 mg nicotine—100's Reg: 10 mg ''tar,'' 0.7 mg nicotine—100's Men: 9 mg ''tar,'' 0.7 mg nicotine av. per cigarette, FTC Report Dec.'81

Medicine

Report from the Surgeon General

"The chief preventable cause of death"

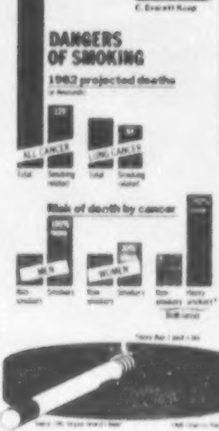
Since 1964 the Surgeon General's reports on the nation's health has dramatically changed the public attitude toward smoking. As a result of its [illegible] and calls for "individual action," smoking ads have been banned from television and radio, and the warning on packs of cigarettes has escalated from a modest "may be hazardous to your health" in 1970 to the current "Warning: The Surgeon General Has Determined That Cigarette Smoking Is Dangerous to Your Health." That notice may become even blunter. Last week's report from Surgeon General C. Everett Koop was the most serious indictment of smoking yet made. The conclusion: "Cigarette smoking is clearly identified as the chief preventable cause of death in our society and the most important public health issue of our time."

According to the report, men who smoke are twice as likely as nonsmokers to die of cancer. The risk faced by female smokers is 30% greater than nonsmokers and still rising. An estimated 430,000 people will die of cancer in the U.S. this year, and the report charges smoking will lead to 129,000 of those deaths. [illegible], Koop said at a press conference, "is responsible for some 340,000 deaths in this country annually ... not only from cancer but from heart trouble, chronic lung and respiratory diseases, and other ailments." Previous reports have warned smoking by pregnant women for miscarriages, premature births and birth defects. Discussing the effects of smoking, Koop said: "The cost only [illegible] human tragedy in the years ahead and enormous economic loss in our country." He noted that smoking results in a financial cost: more than $13 billion a year spent on smoking-related health care and at least another $25 billion in lost production and wages.

This year's report, like its 14 predecessors, is essentially a review of existing data. But it is the first to focus exclusively on the relationship of smoking to cancer. The 1964 report concluded that cigarette smoking was the primary cause of lung cancer in men and probably in women. Today smoking is considered a major cause not only of lung cancer but of cancer of the larynx, oral cavity and esophagus, and a contributing factor in the development of malignancies in the bladder, pancreas and kidney. The report also notes an association between smoking and cancer of the stomach. There may also be a tie to cancer of the cervix.

The number of deaths due to lung cancer is steadily increasing. In 1950 the disease claimed 18,313 lives. This year it is expected to kill 111,000. "It is estimated that 85% of lung cancer mortality could have been avoided if individuals never took up smoking," the report says.

C. Everett Koop



Source: 1982 Surgeon General's Report

"An epidemic among men has existed for many years; now it is being repeated among women," Koop adds. Because lung cancer may take decades to develop, and women began taking up smoking in large numbers only after World War II, lung cancer, in fact, is likely soon to replace breast cancer as the leading cause of cancer death among women.

"If it were not for lung-cancer deaths," says Koop, "the overall cancer mortality would have fallen, reflecting improved diagnosis, treatment and survival times" for other forms of the disease. Unlike cancer of the prostate and breast malignancies, lung cancer, which accounts for a fourth of all cancer deaths of [illegible], fails to respond to treatment. According to the report, only 10% of its victims survive five years after diagnosis.

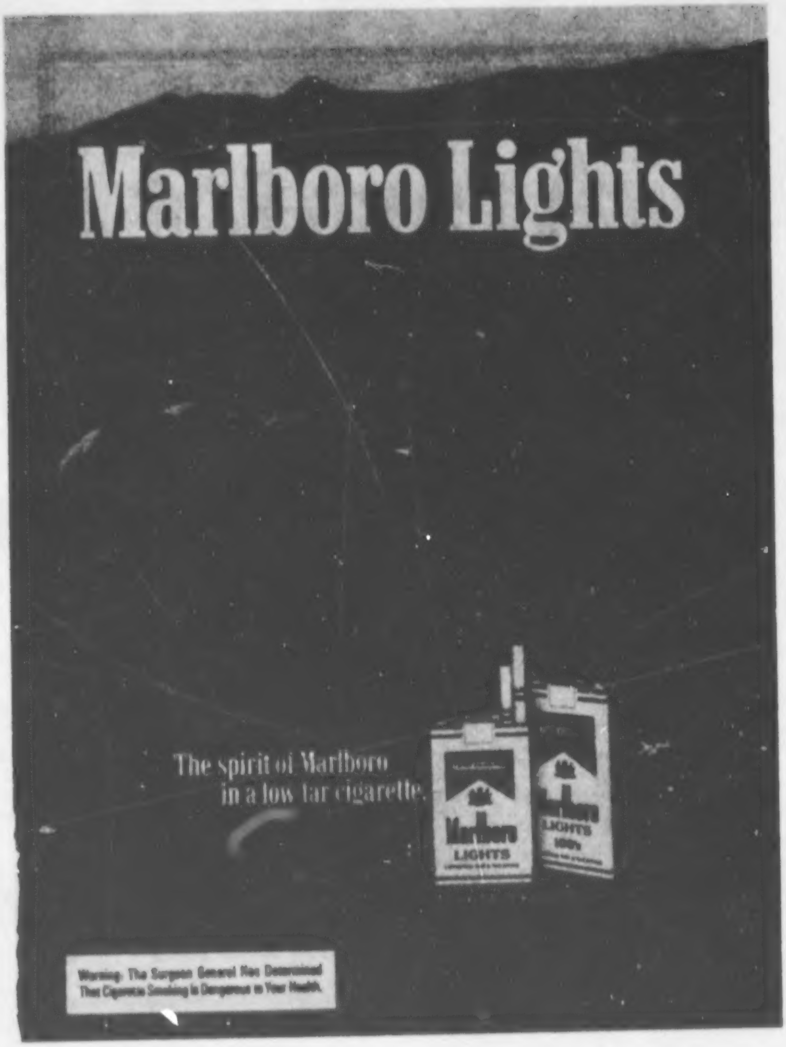
The report cautions against the use of pipes, cigars, snuff and chewing tobacco, and warns of dangers to nonsmokers exposed to cigarette smoke. "Sidestream" smoke emitted into the air from a smoldering cigarette sometimes includes carcinogens in higher concentrations than those inhaled directly by a smoker. The Surgeon General cites two studies that showed increased risk of lung cancer in nonsmoking women who are married to smokers. Such findings are considered preliminary, but, the report states, "the evidence does raise concern about a possible serious public health problem." Says Dr. Edward N. Brandt Jr., Assistant Secretary for Health: "Nonsmokers should avoid being in smoke-filled rooms."

Since the 1964 report, almost 30 million people have managed to give up smoking. "Quitting 'cold turkey' appears to be a more effective strategy than cutting down without trying to stop entirely," says the report. Surprisingly, 95% of the people who broke the smoking habit did so without the help of organized programs. However, the report notes the use of such aids as television smoking clinics and taped telephone messages to encourage maintained abstinence. "Brief and simple advice to quit smoking delivered by a physician" can offer substantial support. Even after a person quits, the report says, it takes up to 15 years for the ex-smoker's chances of developing cancer to drop to those of a nonsmoker. The Surgeon General's report notes that a child is almost twice as likely to become a smoker if either parent is one. As to giving up cigarettes, a college degree helps. Smokers who have gone to college are almost twice as likely to break the habit eventually as noncollege smokers.

Smoking among men reached a high in 1955, when almost 53% of American men smoked. For women, the peak year was 1966, when 33% were cigarette users. Today 37% of men and 29% of women use tobacco regularly. Teen-agers, particularly girls, were of special concern in the 1970s when they began to take up smoking in record numbers, but the young appear to be cutting down a bit now. In another study published last week (see following story), researchers at the University of Michigan announced that only 20% of high school seniors smoked daily in 1981, down from 29% in 1977. Boys seem to be quitting slightly faster than girls, according to the American Cancer Society. Still, 53 million Americans 17 years old and older smoke. In 1980 they spent $19.2 billion and consumed 630 billion cigarettes.

Predictably, the industry-funded Tobacco Institute condemned the report. Says Horace Kornegay, institute chairman: "While many people believe a causal link between smoking and cancer is a given, scientific research has not been able to establish that link, nor has it been able to determine how normal cells become cancerous." Antismoking groups hailed the study but protest that the Reagan Administration has been inconsistent on the issue. They note that the budget and staff of the Government's Office on Smoking and Health have been drastically cut, and complain that a TV campaign featuring Brooke Shields and aimed at discouraging teen-agers from smoking was scrapped, supposedly because of industry pressure. The American Lung Association later picked up the campaign. The Civil Aeronautics Board has eased the regulation requiring airlines to provide no-smoking sections and is considering dropping the rule altogether. The Government has so far failed to take a position on bills pending in Congress that would require more explicit warning labels on cigarette packages. Among the proposed candidates: "Warning: Cigarette smoking is the number one cause of emphysema and lung cancer"; "Warning: Cigarette smoking is a major cause of heart disease"; "Warning: Cigarette smoking by pregnant women may result in birth defects or spontaneous abortion." Says John Banzhaf, executive director of Action on Smoking and Health, a consumer group: "So far, the Surgeon General's report is the only positive thing this Administration has done on the smoking and health issue."

Koop, who was a prominent Philadelphia pediatric surgeon before he became Surgeon General last year, says that the Reagan Administration backs the report and is committed to alert people to the hazards of smoking. In that effort he is counting heavily on the public's common sense. Says he: "If I were a smoker of a pipe, cigar or cigarette and were reasonably intelligent—I had read this report—I would long since have quit." Indeed, Koop once did smoke a pipe but, setting a good example, he gave it up ten years ago. —*By Anastasia Toufexis. Reported by [illegible] Saddler/Washington and Nancy Pierce Williamson/New York*

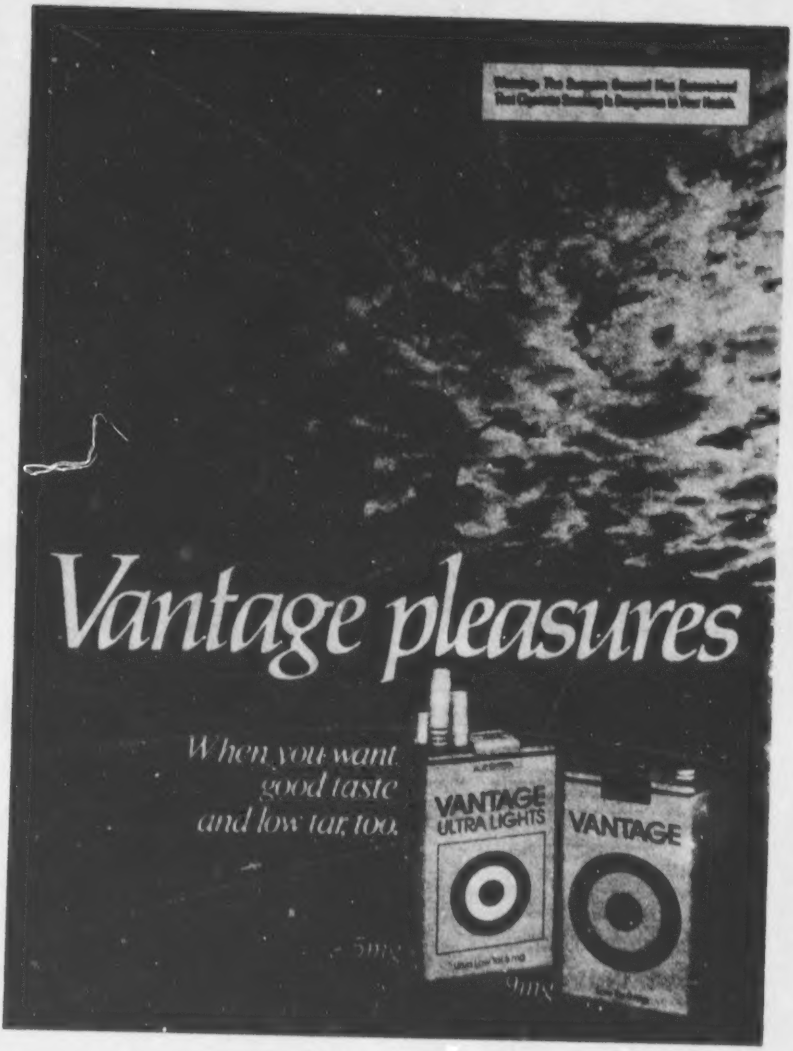


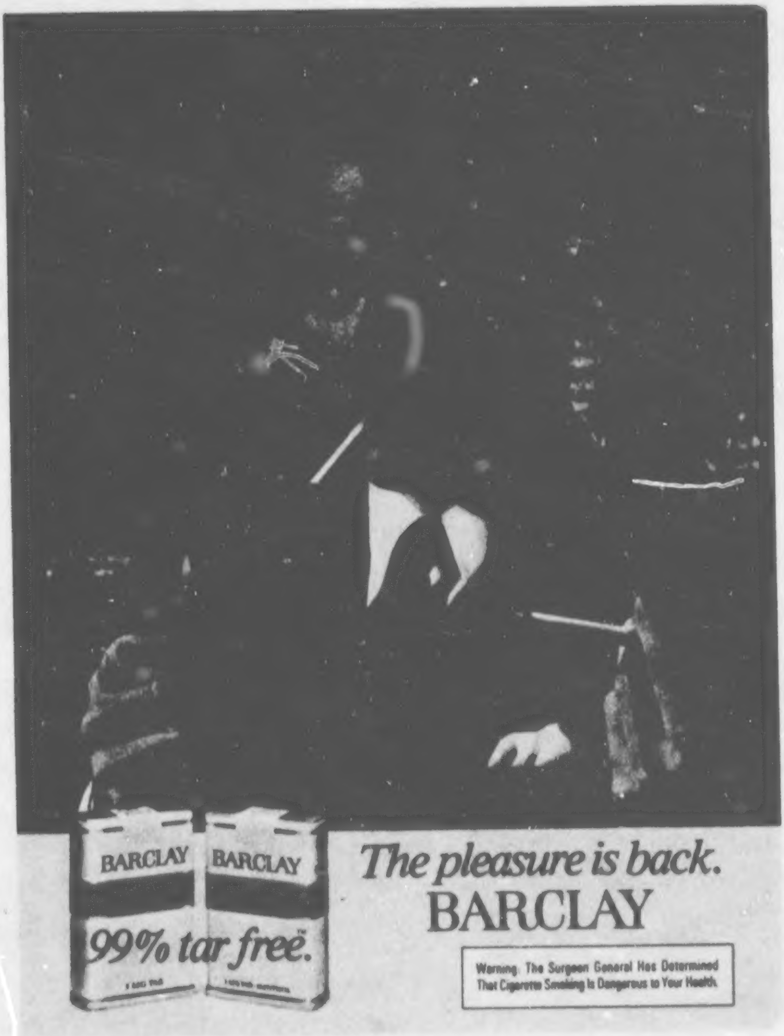
Marlboro Lights

The spirit of Marlboro
in a low tar cigarette.

Marlboro
LIGHTS
Marlboro
LIGHTS
100's

Warning: The Surgeon General Has Determined
That Cigarette Smoking Is Dangerous to Your Health.


Warning: The Surgeon General Has Determined That Cigarette Smoking Is Dangerous to Your Health.
Vantage pleasures
When you want good taste and low tar, too.
VANTAGE ULTRA LIGHTS
VANTAGE
5mg
9mg



BARCLAY BARCLAY

99% tar free.™

The pleasure is back.

BARCLAY

Warning: The Surgeon General Has Determined That Cigarette Smoking Is Dangerous to Your Health.

Mr. **Bliley**. Mr. Waterson, have you conducted any research studies supporting the notion that rotating warning labels reduces cigarette smoking?

Mr. **Waterson**. We have looked at the UK situation where the number of warnings increased. We found no evidence at all.

Mr. **Bliley**. How many?

Mr. **Waterson**. One to three. There has been no evidence at all this has had any impact. We have tried to research it econometrically and second, using surveys of peoples' knowledge and impressions of the health warning.

Mr. **Bliley**. Do you know of any studies by anyone else, that have been conducted that would support this?

Mr. **Waterson**. I don't believe there is any evidence at all to support the notion health warnings have any effect at all on packs of cigarettes. Or advertisements.

Mr. **Bliley**. I see. Do you think that one of the reasons for the decrease in cigarette smoking in the United States might be due to the fact that the U.S. population is becoming more educated and, hence, perhaps more rational?

Mr. **Waterson**. It could well be. I don't have special knowledge required to comment but I am sure that is part of the reason.

Mr. **Bliley**. You mentioned Norway. Do they allow cigarette advertising in Norway?

Mr. **Waterson**. No, it is banned. Drink advertising too is banned.

Mr. **Bliley**. It has cut consumption in neither instance?

Mr. **Waterson**. Zero. Nothing at all. The only effect of both bans we can see is a big increase in illegal distillation of spirits.

Mr. **Bliley**. I see.

Mr. **Waterson**. There has also been an increase in smoking tobacco.

Mr. **Bliley**. You also mentioned Italy. How long has Italy banned advertising?

Mr. **Waterson**. Twenty years.

Mr. **Bliley**. You say consumption has risen by 60 percent.

Mr. **Waterson**. The specific Government data is in the back of my submission to you.

Mr. **Bliley**. So now they are thinking of——

Mr. **Waterson**. [continuing] Reinstating advertising.

Mr. **Bliley**. Are they planning to have required labels?

Mr. **Waterson**. The debates are still going on. I think they will carry health warnings.

Mr. **Bliley**. I see.

Mr. **Waterson**. The situation is parallel to a number of other countries, especially Poland, where a ban has been in existence since 1972, and again consumption has risen over that period from approximately 70 million cigarettes to 90 million cigarettes over that period.

Mr. **Bliley**. It is your opinion, backed by your research, that additional warning labels would have absolutely no effect on consumption?

Mr. **Waterson**. That is my considered opinion, yes, zero.

Mr. **Bliley**. I see.

Mr. Chairman, I want to thank the witnesses again, and I have no further questions.

Mr. **WAXMAN**. You all believe one effect of this legislation will be to adversely affect the economic interests of the advertising agencies and the advertising industry?

Mr. **RUBEN**. I don't even know how to answer that question, honestly. I have no knowledge of that.

Mr. **WAXMAN**. Do you feel that there would be harm to some extent because of the concern about liability?

Mr. **RUBEN**. Cigarettes are advertised on billboards, just like automobiles and local hardware stores, but I have no knowledge at all, or no expertise at all on what the effects of this would be in terms of their desire to continue advertising one way or another.

Mr. **BLILEY**. Would the chairman yield on that point?

Mr. Ruben, you in your testimony brought up penalties. You, as an outdoor advertiser—I understand you have a firm. As you understand the legislation with regard to the penalties, would your firm, say, if you forgot to change the labeling during one of the time periods, could you possibly be held liable?

Mr. **RUBEN**. There are all sorts of liabilities. I am sure the advertiser would hold us liable. I am not sure whether we would be held liable or not. I don't know.

Mr. **BLILEY**. Thank you, Mr. Chairman.

Mr. **WAXMAN**. Did either of the other two have any comments to make about my question? Do you feel that the advertising business would suffer economically if this legislation is adopted?

Mr. **WATERSON**. I believe the most serious aspect of the legislation is not the immediate economic impact, but the fact that it is likely to be used as a stepping stone by many other pressure groups to impose health warnings, advertising restrictions in other areas. This is precisely what happened in Europe.

Mr. **MINTON**. I have no expertise in that field, Mr. Chairman. Our interest is in any imposition of any government regulation upon advertising; that is, at least where it transcends what appear to be the boundaries of lawful regulation.

Mr. **WAXMAN**. You are afraid of other pressure groups. Where has it led in Europe?

Mr. **WATERSON**. The European Parliament next week is to debate further restrictions on drink advertising, for example. The Council of Europe is also debating restrictions on drinking advertising.

Mr. **WAXMAN**. What responsibilities do advertising agencies have in promoting the consumption of products which are unsafe?

Mr. **WATERSON**. I feel many products in this country and Europe are unsafe.

Mr. **WAXMAN**. Do you feel that advertising agencies have any responsibility in this record?

Mr. **WATERSON**. I think it is a Government responsibility as to what should be freely sold and what is not.

Mr. **WAXMAN**. Freely sold? If it is and there is no prohibition, you feel it should be fully advertised?

Mr. **WATERSON**. I think the government should decide these matters in each individual country. I don't think it is the responsibility of the advertising agency to suggest that restrictions should be applied.

If the Government feels that a restriction should be applied, then that is the way it is. But it is their responsibility, not the advertising industry's.

Mr. Waxman. Are you a citizen of the United States?

Mr. Waterson. No, United Kingdom.

Mr. Waxman. Are you a taxpayer here?

Mr. Waterson. Yes, indeed.

Mr. Waxman. We have a lot of people who are getting very sick, many of them are dying due to cigarettes. It is costing the taxpayers of this country millions of dollars to treat their illnesses. We have a budget deficit. We don't want to spend so much of your money in taxes. I assume we are taking more than you like in taxes.

We are all concerned about people's health. It is a moral concern that everyone should have. We want to discourage people from smoking. It is a fact cigarettes are legal and there is no prohibition. No rational person could have the idea that we should say an individual shouldn't be allowed to smoke if they wish.

It is legal to smoke, it is legal to sell cigarettes, it is legal to advertise cigarettes. How should we, if you were in the position of advising us, try to lessen the consumption of cigarettes? How would you advise us to do it?

Mr. Waterson. I think you have a real problem. I think if you add up the cost of all of the products advertised in this country, if you add up the cost——

Mr. Waxman. You can't equate that. A car is not a patently dangerous thing used for only one purpose. A car is used in a very beneficial way. Some people can argue that cigarettes relax them, but I don't think there is any medical expert that could say there is a value to smoking a cigarette, even if someone receives some psychological benefit.

We are selling people the idea of smoking, and the only thing that can come from smoking is bad health.

Mr. Waterson [continuing]. The whole point of my testimony is that we don't know about selling smoking.

Mr. Waxman. How do you account for the increase in smoking when advertising is so widespread?

Mr. Waterson. How do you account for the fact that smoking in Eastern European countries has paralleled that, with no advertising? Drinking has done the same thing.

Mr. Waxman. How do you account for it?

Mr. Waterson. Because advertising has no impact on total consumption. We have shown it over and over again. There are a number of factors which go into increased consumption of any one individual product. It may be a whole string of things. It may be television, pictures, I don't know.

We are clear of that. Every shred of evidence throughout the world suggests it is not advertising that is a basic motivator of that type of factor. If it was true, we would buy cosmetics and everything else in the United States because they are advertised ten times more.

Mr. Waxman. I am not an expert in advertising. We are politicians. We run for office and try to sell ourselves to the public.

Every time we have ever seen a campaign or election, where there has been no campaign, and the only thing on the ballots would be a race for Congress, the voter turnout is low. When there is a competition to try to sell one candidate versus another, the total voter turnout increases.

Why couldn't I assume from that that if there is a campaign to sell a lot of different brands, making smoking a brand of cigarettes more attractive, and each brand competing with the other to make it appear more attractive, that that will increase the total consumption of that particular product?

Why should I not make that assumption?

Mr. WATERSON. There are two points there. I can only go on the research I have seen personally. I have never seen research on an American political campaign. Every evidence I have which covers the tobacco markets of Europe shows that those forms of advertising do not increase the consumption of cigarettes.

In Europe at least the political advertising is outside of the control system so you can make claims that you can't make in brand advertising. You can make claims that are wild and unrealistic, which you can't there.

Mr. WAXMAN. I have never told anybody that voting for me will make them sexy, healthier and more active. I claim they will be happier.

I have nothing further. Mr. Bliley, do you have anything further?

Mr. BLILEY. I just wanted to say I thought we were discussing whether or not we should increase the warning labels on there. I think the testimony from these gentlemen, particularly from Mr. Waterson, was that it does not have the effect of reducing consumption, and for that I am very grateful. I look forward to reading the additional evidence you intend to send us. Thank you.

Mr. WAXMAN. I am certainly interested in reading the additional information and evidence you send us. I must admit it defies my knowledge of what I expect human behavior to be. I am not saying it is the only reason why people smoke but it is certainly one.

I want for the record to read the whole paragraph from the Time Magazine article to which Mr. Bliley referred. The paragraph starts, "Since the 1964 report, almost 30 million people have managed to give up smoking. 'Quitting cold turkey appears to be a more effective strategy than cutting down without trying to stop entirely.' Surprisingly, 95 percent of the people who broke the smoking habit did so without the help of organized programs."

I think that would refer to organized programs to help people stop smoking. People who want to quit, quit. That is the way I did it and the way most other people do as well.

Again, let me thank you gentlemen for your testimony today. We look forward to receiving additional information.

Mr. BLILEY. Before we adjourn, might I have an indication what the schedule will be for this subcommittee?

Mr. WAXMAN. We are expecting to try to work out the following schedule: To hear from the administration next Thursday morning and then to have Friday's hearings devoted to the testimony that we will work out with the Tobacco Institute in order to hear a number of witnesses that day relative to this legislation.

Mr. **Bliley**. Thank you.

[Whereupon, at 3 p.m. the subcommittee adjourned.]

COMPREHENSIVE SMOKING PREVENTION EDUCATION ACT

THURSDAY, MARCH 11, 1982

House of Representatives,
Subcommittee on Health and the Environment,
Committee on Energy and Commerce,
Washington, D.C.

The subcommittee met, pursuant to notice, at 9 a.m. in room B-318, Rayburn House Office Building, Hon. Henry A. Waxman (chairman) presiding.

Mr. Waxman. The meeting of the subcommittee will please come to order.

This morning, the subcommittee continues hearings on the Comprehensive Smoking Prevention Education Act. Last Friday, we heard testimony from a panel of distinguished physician researchers who presented evidence that smoking is the No. 1 health risk factor for Americans. We also heard from a panel of prominent citizens who expressed their personal concern over the health effects of smoking as it touched their lives and those of their families. I regret that more members could not have heard their presentation. It was truly moving, and I think clearly sets forth the reason why this legislation is so necessary.

Today, we will hear from the administration. Recently, the Department of Health and Human Services released an excellent report on the health consequences of smoking as it related to cancer. In releasing the report, the Surgeon General characterized smoking as the chief cause of preventable disease and illness in this country. This alone should make passage of the Comprehensive Smoking Prevention Education Act a top priority.

The pending legislation is designed to make Americans more aware of the serious risks smoking poses to their health, and in the case of pregnant women, to the health of the unborn child. Smoking is a self-destructive habit. It is destructive of human life and is responsible for an almost unimaginable toll in terms of lost productivity to the economy and excess medical costs. Prevention of smoking through every means at our disposal is in our personal and national best interest.

I want to make it clear that changes in the current warning label are not the only steps necessary to make a major difference in the smoking behavior of Americans. It is also important that the Federal Government, through the Office of Smoking and Health, maintain a prominent role in developing new educational materials, work closely with the voluntary health sector and maintain a vigorous research presence. I believe the combined impact of these strategies can have a powerful effect in encouraging current smokers to quit and discouraging potential smokers from striking that first match.

Our first witnesses this morning are a distinguished panel of physicians: Edward N. Brandt is Assistant Secretary for Health of the Department of Health and Human Services. Accompanying Dr. Brandt are Dr. C. Everett Koop, U.S. Surgeon General; Dr. Vincent T. DeVita, Director of the National Cancer Institute; Peter L. Fromer, Acting Director of the National Heart, Lung, and Blood Institute; and William Pollin, Director of the National Institute on Drug Abuse.

I would like to welcome each of you to our hearing today and I will ask my colleague, Mr. Bliley, is there any comment you would like to make?

Mr. BLILEY. No statement. Thank you very much.

Mr. WAXMAN. Dr. Brandt, we are pleased to have you with us. I would like to call on you at this time to make your presentation to the committee.

STATEMENTS OF EDWARD N. BRANDT, JR., M.D., ASSISTANT SECRETARY OF HEALTH, AND DR. C. EVERETT KOOP, SURGEON GENERAL, PUBLIC HEALTH SERVICE, DEPARTMENT OF HEALTH AND HUMAN SERVICES, ACCOMPANIED BY DR. VINCENT T. DeVITA, DIRECTOR, NATIONAL CANCER INSTITUTE, AND DR. WILLIAM POLLIN, DIRECTOR, NATIONAL INSTITUTE ON DRUG ABUSE

Dr. BRANDT. Thank you very much, Mr. Chairman. I am pleased to present to you the statement of the Department of Health and Human Services on the health effects of cigarette smoking. These health effects and their significance to the American people must necessarily provide the rationale and justification for whatever action your committee may take in regard to the bill before you.

As you mentioned, I am accompanied by Dr. Koop, Surgeon General; Dr. Vincent DeVita, National Cancer Institute; and Dr. Peter Frommer of the National Heart, Lung, and Blood Institute.

Let me begin by presenting a capsule description of the health effects of cigarette smoking. Then we will give you a more detailed description of smoking and cancer and in regard to pulmonary disease. I will also address research efforts by the National Institute on Drug Abuse, on the addictive characteristics of cigarette smoking.

In summary, cigarette smoking is clearly the single most important preventable cause of premature illness and death in the United States. Estimates of the number of deaths related to smoking exceed 300,000 annually. One may compare this figure with the 105,000 deaths that occur each year as a result of all injuries, the 20,000 deaths from homicides, or the 40,000 infant deaths.

Cigarette smoking is one of the three major independent risk factors in coronary heart disease; a major cause of cancer of the lung, cancer of the larynx, oral cavity and esophagus, and a major cause of chronic bronchitis and emphysema.

Maternal cigarettes smoking is associated with regarded fetal growth and increased risk for spontaneous abortion and prenatal death, and slight impairment of growth and development during early childhood.

Cigarette smoking acts synergistically with oral contraceptives to enhance the probability of coronary and some cerebrovascular disease. It acts also with alcohol to increase the risk of cancer of the larynx, oral cavity, and esophagus; with asbestos and some other occupationally encountered substances to increase the likelihood of cancer of the lung; and with other risk factors to enhance cardiovascular risk.

Mr. Chairman, cancer was the first disease to be associated with cigarettes. As Dr. Koop pointed out in introducing our 1982 Report on Smoking and Health a few weeks ago, reports linking smoking and lung cancer began appearing in scientific literature as long as 50 years ago. The evidence which links cigarette smoking with lung and other cancers was reviewed in most careful detail in the 1982 report just issued, which will be summarized by Dr. Koop in a few moments.

A subject which was hardly touched upon in the 1964 report is the effect of smoking on women, and in the case of maternal smoking its effect on the fetus and infant. In 1980 this was the topic of the Department's report to Congress. Its conclusions were that women are not immune to the damaging effects of smoking, and that the lesser occurrence of smoking-related diseases among women smokers is a result of their having lagged about a quarter century behind men in their widespread use of cigarettes.

The 1980 report established that cigarette smoking is a major threat to the outcome of pregnancy and the well-being of the baby.

Another public health question, now enormously important, relates to the use of the new low-yield cigarettes. This was the subject of the Department's 1981 report. The report's conclusions were that although there is no safe cigarette, smoking cigarettes with lower yields of tar and nicotine poses a lower risk of lung cancer than smoking other cigarettes, provided there is no compensatory change in smoking pattern.

As you pointed out, Mr. Chairman, the 1982 Report of the Surgeon General focused upon cancer. The report noted that more than 100 diseases that we call cancer have come to be the second leading cause of death in the United States. The report also made a number of other important points, which again will be summarized by Dr. Koop in a few moments.

The National Cancer Institute's effort in smoking research has grown from a $1 million program in 1968 to one costing about $10 million in 1982. Our program now focuses on preventing smoking and involves, first, behavioral studies to examine why people smoke; second, epidemiological studies of populations with high rates of lung and other smoking-related cancers to identify cofactors such as occupation and alcohol consumption; toxicology studies to examine the content of substances in today's low tar and nicotine cigarettes that initiate and promote cancer; pharmacologic studies to determine which factors in tobacco might be addictive; and finally, a program to help smokers quit by encouraging physicians, dentists, and other health professionals to distribute information on smoking cessation to their patients.

This past year, NCI-supported investigators identified how the body handles two carcinogens found in tobacco smoke. They are now determining whether these carcinogens affect specific organs or tissues. This research is relevant because this particular class of carcinogens, called nitrosamines, can be reduced in smoke with the use of better filters.

Often when people think of the health consequences of smoking cigarettes, they think of lung cancer. Yet the number of cigarette-related deaths resulting from noncancerous pulmonary and coronary heart diseases is far greater.

Chronic obstructive pulmonary diseases today represent the fastest growing of the major causes of death, now ranking fifth. In 1980, 55,000 Americans died of pulmonary disease. Almost 3 million Americans now suffer from emphysema, a terribly debilitating disease. The evidence is substantial and unequivocal that cigarette smoking is the chief culprit in the onset or exacerbation of these diseases.

During the past 10 years we have also obtained a far better understanding of the mechanisms of lung damage, including the destruction of elastin, the major structural protein of the lung, which is adversely affected by cigarette smoke. Despite a dramatic decline in mortality during the past decade, coronary heart disease remains the No. 1 killer in this country, claiming three quarters of a million lives in the United States each year.

The scope of the problem is indeed enormous. Cigarette smoking is one of the three major risk factors to coronary artery disease, the other two being high blood pressure and high serum cholesterol. Epidemiological evidence clearly places the smoker at a greater risk of heart disease than the nonsmoker. Furthermore, the more one smokes, the greater the risk. There is also, however, fortunately, evidence that smoking cessation can decrease that risk.

On the basis of drug dependence and the addictive properties of cigarette smoking, and on the basis of research conducted by the National Institute on Drug Abuse, it is our view that cigarette smoking represents a prototypic dependence process and is, in fact, the most widespread example of drug dependence in this country.

It is important to note that DSM-III, the standard diagnostic manual of psychiatric disorders in the United States, and the World Health Organization's International Classification of Disease, both include tobacco dependence as a dependence disorder.

The key findings to date indicate nicotine as the main factor in establishing and maintaining dependence on tobacco. This results, in part, from its multiple, powerful biological and psychological effects, which include stimulation of the release of a number of hormonal substances, such as norepinephrine, epinephrine, growth hormone, cortisol, vasopressin, and probably beta endorphin; the production of behavior-arousal and EEG alerting patterns; and the fact that it is one of the most rapidly metabolized of all self-administered substances.

Mr. Chairman, at this time I would like to turn my attention to the bill before your subcommittee, H.R. 4957. This bill would establish an Office of Smoking and Health within the Department of Health and Human Services. We oppose this provision. Such an office created by statute would not provide the flexibility that permits us, as we have at present, the opportunity to alter the program if needed.

Since 1966 the Department has maintained an active smoking component which has worked closely with State and local governments and with voluntary health and educational agencies to help bring about great changes in the smoking behavior of adults and teenagers alike.

This administration, and in particular our Department, has placed great emphasis on prevention. We are concerned about the health problems that smoking causes, and we will continue to operate an effective program.

We support the bill's requirements for stronger health warnings because we believe they would increase the public's knowledge of the hazards of smoking and make it possible for smokers and potential smokers to make better informed judgments as to whether to continue smoking, or to begin smoking.

We believe, however, that several modifications should be considered. We would strongly suggest that in the proposed section 4 of the Federal Cigarette Labeling and Advertising Act, the Secretary of Health and Human Services be given the responsibility for determining and modifying the actual wording of the multiple warnings. We believe that the system recommended in proposed section 4(b) might be more effective is all of the proposed warnings appear on each brand simultaneously, so that the smoker does not know which warning may appear on the packages he buys. This is the system in use in Sweden, where 16 different warnings appear on packages at a given time. In addition to greater effectiveness, this system would minimize industry expense and compliance oversight requirements. We would, however, want the flexibility to adopt other systems should this prove to be ineffective.

Cigarette manufacturers are currently allowed to cite levels of tar and nicotine as determined by the method specified by the FTC when new or reformulated brands are advertised which have not yet been tested by the FTC. Such a provision we would recommend be added to the proposed section 4(c).

At this time, Mr. Chairman, I would like to turn to Dr. Koop and ask him to summarize the 1982 Report of the Surgeon General on the Health Consequences of Smoking.

STATEMENT OF DR. C. EVERETT KOOP

Dr. KOOP. Mr. Chairman, I would like to do this by calling your attention to the two charts, first looking at the one on your left. You have already heard that cigarette smoking is a major cause of cancer of the lung, larynx, oral cavity, and esophagus, and these proportional charts show the percentage of deaths from cancer of these sites to all cancers that we know about in the human body. They compare 1950 with 1977. The whole pie is all cancer, and the size of the slice represents those cancers we are concerned about that are smoking-related.

You can see from the size of the slice of these two pies that from 1950 to 1977, the percent more than doubled. It went from 12 to 27 percent. I would also call your attention to the fact that these represent four cancers only. They do not count the smoking-related cancer deaths that we know now come from bladder, kidney, and pancreas, some proportion of which can be attributed to cigarette smoking.

If you now look at the chart on your right, it shows the remarkable increase in lung cancer deaths in relation to total cancer deaths. The top red line shows the steady increase in the number of deaths from cancer from 1950 to 1978. And the lower red line shows the equally remarkable decline in all cancers other than cancers of the lung. This line has its remarkable slope primarily due to our added ability to handle cancers of the prostate, the colon, the rectum and breast cancers. And because the survival of lung cancer has remained unchanged, you can see that that blue line in the middle has the same slope as all cancer.

And indeed, if you will look at the time between 1975 and 1978, you will see that the two lines, the red line for all cancer and the blue one for lung cancer only, parallel each other almost exactly, and this coincides with the same period of time when the red line at the bottom is absolutely flat.

There is much more that could be said, Mr. Chairman, but this puts that report in a nutshell.

Dr. **Brandt**. That concludes our statement, Mr. Chairman. We would be pleased to respond to any questions.

[Testimony resumes on p. 294.]

[Dr. Brandt's prepared statement follows:]

STATEMENT BY
EDWARD N. BRANDT, JR., M.D.
ASSISTANT SECRETARY FOR HEALTH

Mr. Chairman and Members of the Subcommittee:

I am pleased to submit to you today this statement of the Department of Health and Human Services on the health effects of cigarette smoking. These health effects and their significance to the American people must necessarily provide the rationale and justification for whatever action your Committee may take in regard to the bill before you.

With me today are Dr. C. Everett Koop, Surgeon General; Dr. Vincent DeVita, Director, National Cancer Institute; Dr. Peter Frommer, Acting Director, National Heart, Lung, and Blood Institute; and Dr. William Pollin, Director, National Institute on Drug Abuse.

I will begin by presenting a capsule description of the health effects of cigarette smoking and then a more detailed description of smoking and cancer and cardiopulmonary diseases. I will also address research efforts by the National Institute on Drug Abuse on the addictive characteristics of cigarette smoking.

In summary, cigarette smoking is clearly the single most important preventable cause of premature illness and death in the United States. Estimates of the number of deaths related to smoking exceed 300,000 annually. One may compare this figure with the 105,000 deaths that occur each year as a result of all injuries, 20,000 deaths from homicides, or the 40,000 infant deaths.

Cigarette smoking is one of the three major independent risk factors for coronary heart disease and arteriosclerotic peripheral vascular disease; a major cause of cancer of the lung, larynx, oral cavity and esophagus; and a major cause of chronic bronchitis and emphysema.

Cigarette smoking is a contributory factor in cancer of the urinary bladder, kidney, and pancreas. It is also associated with peptic ulcer disease. Maternal cigarette smoking is associated with retarded fetal growth, an increased risk for spontaneous abortion and prenatal death, and slight impairment of growth and development during early childhood.

Cigarette smoking acts synergistically with oral contraceptives to enhance the probability of coronary and some cerebrovascular disease; with alcohol to increase the risk of cancer of the larynx, oral cavity, and esophagus; with asbestos and some other occupationally encountered substances to increase the likelihood of cancer of the lung; and with other risk factors to enhance cardiovascular risk.

Involuntary or passive inhalation of cigarette smoke can precipitate or exacerbate symptoms of existing disease states, such as asthma and cardiovascular and respiratory diseases and may be carcinogenic for nonsmokers. Smoking is also the major identifiable cause of deaths and injuries from residential fires.

Mr. Chairman, cancer was the first disease to be associated with cigarette smoking. As Dr. Koop pointed out in introducing our 1982 report on smoking and health a few weeks ago, reports linking smoking and lung cancer began appearing in the scientific literature as long as 50 years ago. In 1964, when the Surgeon General's Advisory Committee's report was issued, lung cancer in men, and chronic bronchitis in both men and women, were the two diseases which the Committee identified as being caused by cigarette smoking.

The evidence which links cigarette smoking with lung and other cancers was reviewed in the most careful detail in the 1982 report just issued. Today, 18 years after the 1964 report, additional human experience and enormous amounts of new research make it possible for science to conclude that cigarette smoking is a major cause of cancers of the lung, larynx, oral cavity, and esophagus, and that it is a contributory factor in the development of cancers of the bladder, pancreas, and kidney. Lung cancer accounts for one out of every four cancer deaths, and 85 percent of these are due to smoking. Overall, approximately 30 percent of all cancer deaths are attributable to tobacco use.

A subject which was hardly touched upon in the 1964 report is the effect of smoking on women, and in the case of maternal smoking, its effect on the fetus and infant. In 1980, this was the topic of the Department's report to Congress. Its conclusions were that women are not immune to the damaging effects of smoking. and that the lesser occurrence of smoking-related diseases among women smokers is a result of women having lagged one-quarter century behind men in their widespread use of cigarettes.

The 1980 report established that cigarette smoking is a major threat to the outcome of pregnancy and the well-being of the baby. The risk of spontaneous abortion, fetal death, and neonatal death increases directly with increasing levels of maternal smoking during pregnancy. Smoking causes a markedly increased risk of heart attack and subarachnoid hemorrhage.

Another public health question, now enormously important, relates to the use of the new, low-yield cigarettes. This was the subject of the Department's 1981 report. The Report's conclusions were that although there is no safe cigarette, smoking cigarettes with lower yields of tar and nicotine poses a lower risk of lung cancer than smoking higher-yield cigarettes, provided there is no compensatory change in smoking patterns. Increasingly, smokers have turned to these lower-yield products; there is evidence to suggest that in doing so, at least some have increased their smoking or changed the way they smoke. This may have negated any potential benefit in their having switched to these products.

Smoking and Cancer

The 1982 Report of the Surgeon General on the Health Consequences of Smoking focussed upon cancer. The report noted that the more than 100 diseases we call cancer are the second leading cause of death in the United Sates. The report also made these important points:

- It is now clear from a large number of epidemiologic studies--both retrospective and prospective--that smoking is causally related to at least 30 percent of all cancer deaths. This means that approximately 129,000 people a year die of cancers related to smoking. In 1964 the Surgeon General's Advisory Committee was able to conclude that cigarette smoking causes lung cancer in men. Now subsequent studies show it causes lung cancer in women as well. Smoking is also the major causal factor in cancers of the larynx, mouth and esophagus. The habit contributes to development of cancers of the bladder, pancreas and kidney. Although cigarettes are the major concern because of the number of people who smoke them regularly, pipes and cigars are also implicated in cancers of the lung, larynx, mouth and esophagus. The cancers I have mentioned are ones that have not been especially responsive to our current treatment methods.

- The causal relationships are strong. If we just look at lung cancer, the major cause of cancer death among U.S. males, a cigarette smoker is 10 times more likely to die of this disease than a nonsmoker. And this risk increases with the number of cigarettes smoked--a direct dose-response relationship. One optimistic point in the report was that the risk decreases among persons who have quit smoking. Former smokers who quit 15 years ago or longer have lung cancer mortality rates only slightly above those of nonsmokers. In terms of time trends, since 1950 we have seen the lung cancer rate increase more than five percent a year among American women. They started smoking in large numbers after World War II, about 20 years later than men. Our statistics suggest that cancer of the lung may soon overtake breast cancer as the major cause of cancer death for women.

- For the first time, two preliminary epidemiologic studies are suggesting an increased risk of lung cancer in nonsmoking wives of smoking husbands, implicating sidestream smoke as a cancer risk factor. A third study shows a trend in this direction, but the results are not statistically significant. More evidence is needed on the risk to "passive" smokers.

- We are encouraged by the figures on people who have been able to quit smoking, most of them through their own efforts. In 1965, 42 percent of adults in the United States smoked. In 1980, the proportion dropped to 33 percent. We are also encouraged by the recent report of the National Institute on Drug Abuse showing a drop in the number of high school seniors who smoke daily, from 29 percent in 1977 to 20 percent in 1981. These encouraging trends reflect the work of both Government, voluntary and private health agencies in educating the public about the health hazards of smoking.

The National Cancer Institute's effort in smoking research has grown from a $1 million program in 1968 to one costing $12.5 million in 1982. The program's original goal was to reduce the risk of cancer in smokers who could not be persuaded to quit. Most of that effort focused on developing a less-hazardous cigarette and less-hazardous ways of smoking. In 1978, we decided to discontinue development of a less-hazardous cigarette, leaving that task to be continued by the tobacco industry. Our program now focuses on preventing smoking and involves:

- Behavioral studies to examine why people smoke, with the goal of finding ways to encourage them not to begin smoking or to help them quit;

- Epidemiologic studies of populations with high rates of lung and other smoking-related cancers to identify cofactors, such as occupation and alcohol consumption, that might increase a smoker's chance of developing cancer;

- Toxicology studies to examine the content of substances in today's low-tar and nicotine cigarettes that initiate and promote cancer and to learn how these substances are handled by the body;
- Pharmacologic studies to determine which factors in tobacco might be addictive and how those substances work;
- A program to help smokers quit by encouraging physicians, dentists, and other health professionals to distribute information on smoking cessation to their patients.

The current programs of the National Cancer Institute include a number of studies being carried on by NCI epidemiologists in areas of the United States where lung and other smoking-related cancers are high, to evaluate risk factors in addition to cigarette smoking that may contribute to those high cancer rates.

This past year, NCI-supported investigators identified how the body handles two carcinogens found in tobacco smoke. They are now determining whether these carcinogens affect specific organs or tissues. This research is relevant because this particular class of carcinogens, called nitrosamines, can be reduced in smoke with the use of better filters.

In the area of behavioral studies, we have a group of four different grantees investigating smokers who have quit, to determine how they differ from smokers who can't quit. We know that 95 percent of smokers who quit do so on their own. From this study we hope to learn who they are, what techniques they used and how they differ from smokers who can't quit. These studies are nearly complete, and a workshop scheduled for this spring should yield some important new information on what motivates people to quit smoking and how these techniques might be applied to help others.

I would like to mention one program of the Office of Cancer Communications because we are proud of its success. Based on the well-documented evidence that counseling by a physician can motivate smokers to quit, the office developed a "Helping Smokers Quit Kit" for physicians to use with patients. More than 135,000 of these kits--which include posters for the waiting room, take-home materials for smokers, and information on counseling the smoking patient--were distributed. In fact, the kit was so well received that a similar one was created for dentists. This project was endorsed by the American Dental Association, which is cooperating with us to distribute the kit. Staff are now working with the American Pharmaceutical Association to develop a similar program for pharmacists.

The National Cancer Institute is interested in pursuing some new leads. There is a growing body of evidence that people who smoke low tar and nicotine cigarettes adjust their smoking behavior--inhaling more deeply or covering the ventilation holes in the cigarette filters. This is thought to be an attempt to compensate for the decreased nicotine yield. We plan to take a look at this question. If these preliminary studies are confirmed, it would imply that smokers of todays' cigarettes are not decreasing their exposure to nicotine and in fact may actually be increasing their exposure to harmful combustion products such as hydocarbons and carbon monoxide.

Smoking and Cardio-pulmonary Disease

Very often, when people think of the health consequences of smoking cigarettes they think of lung cancer. Yet, the number of cigarette-related deaths resulting from (noncancerous) pulmonary and coronary heart diseases is far greater.

Chronic obstructive pulmonary diseases (COPD) today represents the fastest growing of the major causes of death, now ranking fifth. In 1980, 55,000 Americans died of pulmonary diseases. Almost three million Americans now suffer from emphysema, a terribly debilitating disease. More than seven million have chronic bronchitis. Chronic respiratory diseases account for approximately ten percent of disability benefits for lost work hours. And, the evidence is substantial and unequivocal that cigarette smoking is the chief culprit in the onset or exacerbation of these diseases.

Research has for some time provided us with data demonstrating that smokers have higher mortality rates from chronic bronchitis and emphysema and that smokers have far less pulmonary function than nonsmokers. During the past ten years, we have also obtained a far better understanding of the mechanisms of lung damage, including the destruction of elastin, a major structural protein of the lung which is adversely affected by cigarette smoking. And, within recent years, evidence has been reported which suggests that the small airways function of the lung may be adversely affected in healthy nonsmokers if they are exposed to cigarette smoke from others.

Research continues in this area to give us a better basis of knowledge in order to prevent or arrest the progress of pulmonary diseases. Studies have demonstrated the benefits of smoking cessation, including improvements in lung performance on standard spirometric (breathing) tests soon after one quits. However, pulmonary diseases represent a progressive condition and once a certain point is reached we can only hope to retard its progression. Investigators are working towards developing a simplified means of detecting the disease condition at an early enough stage to intervene and reverse the process. At the same time, research continues to try to develop and evaluate programs designed to help individuals give up smoking, since smoking prevention or cessation represents the only effective intervention measure we now have.

Despite a dramatic decline in mortality during the past decade, coronary heart disease remains the number one killer in this country, claiming three-quarters of a million lives in the United States each year. For every minute of the day, there are about three Americans who suffer a heart attack. While the progress in reducing coronary heart disease and other cardiovascular deaths during recent years is heartening, the scope of the problem remains enormous.

Cigarette smoking is one of the three major risk factors for coronary heart disease; the other two being high blood pressure and high serum cholesterol. Epidemiological evidence clearly places the smoker at a higher risk of heart disease than the nonsmoker. The more one smokes, the greater the risk. There is also evidence that smoking cessation can decrease the risk. After only one year free of cigarettes, a former smoker may be able to reduce the risk of heart disease to close within that of the nonsmoker.

The exact mechanisms of how cigarette smoking affects coronary heart disease are still unknown and are the subject of considerable research now underway. Nevertheless, the evidence based on epidemiologic and autopsy studies clearly linking the amount of smoking with higher incidence of heart disease, is indeed impressive.

Addictive Properties of Cigarette Smoking

On the issue of drug dependence and the addictive properties of cigarette smoking, and on the basis of research conducted by the National Institute on Drug Abuse (NIDA), it is our view that cigarette smoking represents a prototypic dependence process and in fact is the most widespread example of drug dependence in this country. It is important to note that DSM-III, the standard diagnostic manual of psychiatric disorders in the U.S.,and the World Health Organizations's International Classification of Disease both include tobacco dependence as a dependence disorder.

NIDA researchers are exploring the same questions that we ask of any other drug-using behavior: what factors (1) determine initial expermientation of use; (2) the progression from casual recreational use to regular, compulsive use; (3) the achievement of abstinence; and (4) the high rate of relapse.

The key findings to date implicate nicotine as the main factor in establishing and maintaining dependence on tobacco. This results in part from its multiple, powerful biological and psychological effects, which include stimulation of the release of a number of hormonal substances (norepinephrine, epinephrine, growth hormone, cortisol, vasopressin, and probably beta endorphin); the production of behavioral/arousal and EEG alerting patterns; and the fact that it is one of the most rapidly metabolized of all self-administered substances.

It is the establishment of tobacco dependence with its consequent impairment of an individual's ability to easily discontinue behavior that he or she intellectually knows is self-damaging which leads to the multiple grave health consequences that I have previously summarized. The extent of tobacco's ability to do this is most easily comprehended when one notes that whereas the large majority of Americans who use alcohol are subjectively and objectively able to satisfactorily control their level of use, over 75 percent of tobacco smokers would like to quit but have difficulty in doing so. Along with all the devastating health effects that are a consequence of tobacco smoking is the fact that we are talking about an addictive disorder that is as challenging as that of any other drug we know about.

Mr.Chairman, in closing, I would like to turn my attention to the bill before your Subcommittee, H.R. 4957.

This bill would establish an Office of Smoking and Health within the Department of Health and Human Services. We oppose this provision. An Office created by statute would not provide flexibility. At present, we can alter the program as needed. Indeed, since 1966 the Department has maintained an active smoking component, which has worked closely with State and local governments and with voluntary health and educational agencies to help bring about great changes in the smoking behavior of adults and teenagers alike. This Administration, and in particular this Department, has placed great emphasis on prevention. We are concerned about the health problems that smoking causes, and we will continue to operate an effective program.

We support the bill's requirements for strong health warnings because we believe they would increase the public's knowledge of the hazards of smoking and make it possible for smokers and potential smokers to make better-informed judgments as to whether to continue smoking or begin smoking. We believe however, that several modifications are needed.

We would strongly suggest that in proposed section 4 of the Federal Cigarette Labeling and Advertising Act, the Secretary of Health and Human Services be given the responsibility for determining and modifying the actual wordings of the multiple warnings.

We believe that the system recommended in proposed section 4(b) might be more effective if all of the proposed warnings appear on each brand simultaneously, so that the smoker does not know which warning may appear on the packages he buys. This is the system in use in Sweden, where 16 different warnings appear on packages at a given time. In addition to greater effectiveness, this system would minimize industry expense and compliance oversight requirements. We would however, want the flexibility to adopt other systems should this prove to be ineffective.

Cigarette manufacturers are currently allowed to cite levels of tar and nicotine as determined by the methods specified by the FTC when new or reformulated brands are advertised which have not yet been tested by the FTC. Such a provision should be added to proposed section 4(c).

Mr. Chairman, this concludes my statement. We will be pleased to respond to questions you may have.

Mr. **Waxman**. I want to thank you both for your statement. We appreciate the fact that you summarized it, and without objection your full statement will be made a part of the record. I would like to ask some questions of you, Dr. Brandt. You and the others with you may be able to answer yes or no to these questions, but if you wish to elaborate, feel free to do so.

I would like to know whether the following statements are scientifically valid:

Cigarette smoking is the largest preventable cause of illness and premature death and is associated with the unnecessary deaths of over 300,000 Americans annually.

Dr. **Brandt**. Yes, that is the scientific evidence.

Mr. **Waxman**. Smoking is the No. 1 cause of lung cancer in the United States and is the major cause of chronic obstructive lung disease.

Dr. **Brandt**. Yes.

Mr. **Waxman**. Cigarette smoking is the No. 1 cause of emphysema.

Dr. **Brandt**. Yes, sir.

Mr. **Waxman**. Heart disease accounts for nearly one-half the deaths in this country and it is estimated that one-third of these deaths are attributable to smoking.

Dr. **Brandt**. If you amend that to be cardiovascular disease, the statement is correct.

Mr. **Waxman**. Cigarette smoking is the major cause of heart disease.

Dr. **Brandt**. Yes.

Mr. **Waxman**. Pregnant women who smoke are at higher risk for the possibility of spontaneous abortion, stillbirths, premature births, and child weight deficiencies than women who do not smoke.

Dr. **Brandt**. Yes, that is correct.

Mr. **Waxman**. Women who take birth control pills and smoke are more likely to suffer a heart attack or stroke than women who do not smoke.

Dr. **Brandt**. That is correct.

Mr. **Waxman**. Certain occupational hazards, in conjunction with an individual's smoking, increases substantially the risk of disease and death.

Dr. **Brandt**. That is right.

Mr. **Waxman**. Cigarette smoking may cause death from heart disease, emphysema, or cancer.

Dr. **Brandt**. That is right.

Mr. **Waxman**. Cigarette smoking is addictive and will injure your health.

Dr. **Brandt**. That is right.

Mr. **Waxman**. No matter how long one smokes, quitting greatly reduces the risk to their health.

Dr. **Brandt**. That is correct.

Mr. **Waxman**. The tobacco industry has made a number of statements about this legislation and about the health problems that many claim are associated with smoking.

It has been suggested that requiring specific warning statements about heart disease or lung cancer will send a signal to young prospective smokers that smoking will only cause diseases that affect older people. The implication of this position is that the current warning label is more meaningful than those proposed in the legislation.

Do you agree?

Dr. **Brandt**. I think that the warning labels that name specific diseases will influence younger people to recognize that in the first place, we have to get across to everyone that the disease, is a result of cigarette smoking, is cumulative and dose-related. And I think if we can emphasize to young people not only the fact that it is harmful to their health but also causes specific illnesses, that would be more effective.

Furthermore, it depends on how young they are talking about, but the proposed warning about women who are pregnant and smoking would certainly get to a younger group of people.

Mr. **Waxman**. Over the years, the tobacco industry has challenged the Surgeon General's statements about the relationship between smoking and health. They have suggested that the Surgeon General's warning, however well intended, is more conjecture than scientific fact.

For example, in a 1982 review of scientific literature entitled "Cigarette Smoking and Cancer: A Scientific Perspective", the Tobacco Institute writes, and I am quoting them, "The claim that cigarette smoking causes lung cancer has not been proven scientifically. The charge ignores unresolved scientific questions concerning animal experiments, smoking patterns, and lung cancer rates, diagnostic variables and many confounding factors."

Would you care to respond?

Dr. **Brandt**. The question of what is scientific proof, I guess, is the issue that is being raised, and the argument has been raised that until such time as you can show the physiologic mechanism by which cigarette smoke transforms a normal cell into a malignant cell, you cannot claim that smoking causes cancer.

We know of very few mechanisms, that result in disease, yet we do know a lot of causes and we do know that if you can get people to quit smoking, their risk of lung cancer and heart disease will diminish.

I think Dr. DeVita may be able to address this in some more detail.

Dr. **DeVita**. Dr. Brandt put it well, Mr. Chairman. My own personal feeling is that the scientific evidence is irrefutable in the sense that the strength of association of smoking and lung cancer is overwhelming. The dose response relationship between the incidence of smoking and the number of cigarettes smoked and the time and duration of smoking is irrefutable, and the fact that you could cease smoking and reduce the mortality from lung cancer is one further piece of evidence. I think that the animal data shows that you can cause cancer from cigarette products.

I believe that the statement you just read would not stand up to the test of scientific facts.

Mr. **Waxman**. Do you believe that we must fully understand the etiology of cancer before we can determine the role of smoking in promoting the incidence of cancer?

Dr. **DeVita**. I do not believe we have to understand the etiology of any disease to prevent it. History is replete with prevention of disease without knowing the causes—for example, smallpox and cholera. We know that cigarettes cause lung cancer, so if we can prevent smoking, we can do a lot to alleviate the cancer problem in this country.

Mr. **Waxman**. Frequently you read in tobacco industry publications that the field of epidemology yields only statistics, not facts from which scientific conclusions can be derived. Would you explain the role and importance of epidemiology in establishing causation in a disease like lung cancer?

Dr. **DeVita**. Well, epidemiology is like a doctor for the entire country listening to what is going on in the country, as opposed to what is going on in an individual patient and is a largely used method of case control studies; that is looking at individual diseases and tracing back to controls that do not have the disease and looking at the variables that seem to be influencing the incidence of cancer.

What is important for an epidemiological study, which is a very sound scientific method, is the strength of the association to the particular factor, and if you put a number of suspected carcinogens on a scale and looked at the relationship between, say, cigarette smoking and any number of other materials that we are investigating at the present time, the difference in the association is really what is key. The relative risk of lung cancer for a heavy smoker is about tenfold what it is for nonsmokers. For a very heavy smoker, two packs a day, you are talking about a 20 to 25-fold increase in risk.

These are very sound methods of associating certain agents with the incidence and mortality from disease.

Mr. **Waxman**. We often hear the suggestion that genetics may be responsible for illness associated with smoking. Some people are more predisposed to cancer or heart disease. Can genetics explain the correlation between smoking and chronic lung disease?

Dr. **DeVita**. In my opinion, no. There are some twin studies, identical twins, with one smoking and one not, and only the smoking twins get lung cancer; the nonsmoking twins do not. And that would be continually confirmed. I see no evidence to the contrary.

Mr. **Waxman**. I want to recognize my colleagues for questions. I might have some additional ones later.

Mr. Bliley.

Mr. **Bliley**. Thank you, Mr. Chairman.

Dr. Koop, in your recent press conference announcing publication of this year's Surgeon General's report, you claimed that, and I quote, "Smoking is responsible for some 340,000 deaths in this country annually."

Are you aware that this figure was manufactured without any scientific basis by an advertising man, Emerson Foot, back in 1965, who publicized the first Surgeon's General report?

Dr. **Koop**. No, sir, I am not.

Mr. **Bliley**. Where did you get your figure, 345,000?

Dr. **Koop**. We got our information from the National Center for Health Statistics.

Mr. **Bliley**. Dr. Koop, one of the points made in this year's Surgeon General's report was a statement that about half the cigarette smokers who quit do not resume the habit, and that about 95 percent of the quitters do so on their own, without help from outside sources.

Doctor, do you not think these figures contradict the statement in the proposed warning label regarding addiction, which suggests it is nearly impossible to quit?

Dr. **Koop**. No, I do not think so, sir. Studies that you just quoted also indicate that it is the motivation beyond the quitter's response that is the important thing. And if you have the kind of a person who can be self-rewarding, then his motivation is higher.

For example, my father, a two-pack cigarette smoker, had a terrible chronic cough. My mother asked me one day if I could do something to help him stop. I said he will never stop because he has not got the guts. He was standing right behind me, and he never smoked again in his life. He was the kind of a man who had a self-rewarding kind of a personality. I think that is what counts in the motivation of these people.

Mr. **Bliley**. I see. Doctor, in your extensive medical background, have you had any training in behavioral sciences?

Dr. **Koop**. Specific training that comes in college and medical school and graduate school, and the fact that you cannot help but learn something by watching people in medical practice over the years.

Mr. **Bliley**. But you have not had any specific training?

Dr. **Koop**. No, sir.

Mr. **Bliley**. Thank you.

Dr. Brandt, have you had any training in behavior sciences?

Dr. **Brandt**. I have had no formal training in behavioral sciencies.

Mr. **Bliley**. I see. Are you familiar with this report, this report to the President and the Congress on health hazards associated with alcohol and methods to inform the general public of these hazards? It was published in November 1980.

Dr. **Brandt**. I am not familiar in detail; no, sir.

Mr. **Bliley**. I see. Well, in that report, I want to read you some statements. While it was concerned primarily with alcohol, it does take on tobacco.

> We were concerned about the overuse of one of the Government's most important forms of health alert, a general health hazard warning label, if it is possible to communicate the information adequately through other means. If, as a number of communications experts advise, the public is becoming jaded over Government warnings, the Government should use health hazard warning labels with caution.

The second statement:

> Labeling alcoholic beverages with a series of specific health hazard warning,

rotating labels, such as we are talking about here—

> Was also considered as a possible method to convey a large number of specific health warnings to the alcohol-consuming public. The departments believed rotating labels for alcoholic beverages would confuse the public, cause them to believe that one particular brand, for example with 50-percent alcohol, might cause alcoholism, while another product with 12-percent alcohol might cause birth defects, and so on. Also, such a requirement would pose potentially difficult administrative and enforcement problems, especially affecting imported products.

> Pregnant women in childbearing years confront multiple hazards in the safe completion of pregnancy. Among these are cigarette smoking, alcohol consumption, excessive amounts of caffeine, and inadequate diet. A strategy based on individual warnings directed toward each health risk may simply have the effect of overwhelming the woman and her family with prohibitions. If everything appears to be harmful, some may adopt the fatalistic view and continue unsafe habits and lifestyles.
>
> It is our judgment such information can be more successfully conveyed through a public information campaign covering all significant risks to pregnancy, rather than through a labeling effort directed toward the single risk of alcohol consumption with corollary efforts singling out smoking and caffeine.
>
> Although smoking levels have declined in public awareness, the health hazards have increased. The department concluded, after reviewing available studies, that it is impossible at this time to isolate the impact of any specific communication technique on smoking behavior, including the cigarette warning label on the cigarette package.

Do you agree with those statements?

Dr. BRANDT. Well, I cannot agree with all of those statements, Mr. Bliley. I think that in the first place, we are trying to be selective.

I would agree with the statement that you can overwhelm the public with information about everything being harmful, and that it is important to select those things that have the greatest risk to the public. If one looks at the causes of death, and in particular if one looks at the loss of years of productive life, that is, premature deaths, deaths before the life expectancy, and selects from that list those agents that have the greatest influence on persons losing their lives, and selectively warns on that, then we will accomplish the most. Clearly, cigarette smoking leads that list. We feel that therefore we must warn the public.

Now that does not mean that that is the only thing we will do. Certainly, public education efforts must continue. Certainly we have to continue our research, particularly on how people can quit smoking.

So I think we will be selective. I do not disagree that we should be, but I think cigarette smoking is certainly right at the moment the most important thing we can address.

Mr. BLILEY. Well, Dr. Brandt, you cited the Swedish experience.

Dr. BRANDT. Yes, sir.

Mr. BLILEY. We had testimony Friday afternoon at our last hearing, so far unrefuted, that in 11 years, 5 years before and 6 years since rotating labels went on the packs, there has been absolutely no change or virtually no change in consumption in Sweden.

In Great Britain, where they have had rotating labels for 3 years, there has been no measurable change in consumption, before or after.

In Norway, where they have totally banned cigarette advertising, and there has been a massive campaign by the Government to educate people on the dangers of smoking, there has not been any change.

In Poland, where cigarette advertising is banned, there has been no change in consumption. And indeed, in Italy, where cigarette advertising has been banned for 20 years, consumption is up 60 percent.

Now, we are not in this bill today talking about health hazards. It is not designed that way. It is designed to putting labeling on to get people to stop smoking. The fact of the matter is that where it has been tried, it has not worked.

Now neither you nor Dr. Koop are trained in behavioral sciencies. What do you base your testimony on that by doing this, we will reduce smoking?

Dr. **Brandt**. Well, I think that one can look at what is happening in this country in the past 18 years. Cigarette consumption is down. The most recent survey of high school seniors, for example——

Mr. **Bliley**. True. I accept that. But is it down because of the warning on the packs, or is it down because of the education?

Dr. **Brandt** [continuing]. I think it is probably both.

Mr. **Bliley**. You think it is probably both? Can you state for a fact? Do you have any studies to say that it is down because of labeling?

Dr. **Brandt**. No, sir, but——

Mr. **Bliley**. Thank you. You have answered my question. I yield back my time to the chairman.

Mr. **Waxman**. I thank the gentleman for yielding.

Mr. Whittaker.

Mr. **Whittaker**. Thank you, Mr. Chairman. I regret that I was unable to attend last Friday's hearings, but I do very much welcome Dr. Brandt and the panel.

I would like to, for my own edification, inquire essentially what the agency has in mind when they suggest simultaneous labeling might be more effective than the rotating labeling. I am curious about how many labels could be placed on a cigarette pack or whether it should be, for example, two packs out of a carton, or would it be required on all cigarettes of whatever brand for some period of time? What essentially are you proposing there?

Dr. **Brandt**. What we are proposing is that there be only one warning label on any one package, but that in any carton or any selection of packages, the smoker would be exposed to all of the warning labels that are available. That is, rather than run one warning label for 6 months and then another one, that you run all of them simultaneously so that they are constantly exposed with a wide variety of information.

Mr. **Whittaker**. Dr. Brandt, would you favor, and when I say "you" I mean you as the agency, would you favor a substantial increase in cigarette taxation as a disincentive to smoking, and directing possibly the increased revenue toward defraying some of the health-related costs of smoking and/or research?

Dr. **Brandt**. Well, as you know, sir, the President's budget does not call for such an increase, and I would look upon the excise tax issue as more of an economic question than one I am qualified to answer.

Mr. **Whittaker**. Would you hazard a guess, if it is possible within the amount of research you have done in this area, what the level of additional taxation is that would be necessary per pack to cover the estimated $13.6 billion of health-related costs, just to break even?

Dr. **Brandt**. No, sir. I am afraid I do not have that information. We will be happy to try to look into that and provide it for the record if you would like.

[The following information was received for the record:]

In 1981, 640 billion cigarettes or 32 billion packages (20 cigarettes per package) were sold. An eight cent Federal excise tax per package generated $2.5 billion in revenue in 1981.

Thus, the Federal excise tax would have to be raised to 43 cents per package to generate revenues of $13.6 billion (assuming 32 billion packages are sold). To generate $25 billion in revenue, the Federal excise tax would have to be raised to 78 cents per package (assuming 32 billion packages are sold).

Mr. Whittaker. I would appreciate it. And in addition, I would also like to ask what amount above that level of taxation would be required to recoup the estimated $25.8 billion costs for premature death and disability? So if you could bring that to our attention, I would appreciate it.

Dr. Brandt. Yes, sir.

Mr. Whittaker. What has been the experience in other countries with increased levels of taxation on cigarette products in minimizing or discouraging increased consumption of tobacco?

Dr. Brandt. Well again, it is difficult to attribute change to any one variable. The most recent data from England is that cigarette smoking is dropping at a very rapid rate in that country. There has been a significant change over the past 2 to 3 years in the consumption of cigarettes in England. Some persons attribute that primarily to the use of the warning labels. Some attribute it to the increases in taxes.

The most recent event that has happened in that country with respect to cigarettes has been an increase in the level of taxes. Whether or not one can attribute any change in human behavior to any single event is somewhat problematic. That is the one country about which we have information at present.

Mr. Whittaker. In my reading, England is the most recent country to implement a high level of taxation. Is that the only country that has implemented that in the last decade?

Dr. Brandt. It is the only country that I have firsthand experience about, Mr. Whittaker. Let me see if anyone else on the panel knows that information.

[Pause.]

Dr. Brandt. No. Well, we will be happy to look at that and provide you with that information.

[Testimony resumes on p. 313.]

[The following information has been received for the record:]

Background data on the experiences of other countries on the taxation of cigarettes and cigarette consumption patterns.

Source: Roemer, Ruth. Legislative Action to Combat the World Smoking Epidemic; A Report to the World Health Organization. Chapter XII. "Fiscal and Economic Measures." Draft report, University of California, Los Angeles, California, 1982.

LEGISLATIVE ACTION TO COMBAT THE WORLD SMOKING EPIDEMIC.

A Report to the World Health Organizaton

by

Ruth Roemer, J.D.
School of Public Health
University of California
Los Angeles, California

July, 1981

Chapter XII. Fiscal and Economic Measures

> There are some who allege that Governments have a vested interest in smoking because of the vast revenue that gets caught by the Chancellor's net. I can assure you that this is nonsense. It would be quite possible to raise this revenue in some other way.
>
> --D. Ennals, Secretary of State for Health,
> United Kingdom, Paper presented to the
> Oxford Medical Society, 27 October 1976

The tobacco industry has large stakes in defeating efforts to control the smoking epidemic. The tremendous concentration of economic power in the seven transnational tobacco conglomerates, described in a 1978 report of the United Nations Conference on Trade and Development,[157] presents a formidable adversary to governments struggling to discourage their young people from taking up smoking and to persuade smokers to free themselves from tobacco dependence. Ranged on the side of the tobacco interests are their enormous financial resources, their control of industrial technology for producing, manufacturing, and packaging tobacco products, their mastery of sophisticated marketing techniques, and their secret weapon--the addictive nature of tobacco.

At the same time, governments have a significant economic interest--leaving aside humanitarian concerns--in protecting their people against premature death and chronic disability from smoking resulting in loss of productivity. Against the much-vaunted economic benefits of tobacco production must be weighed the high costs of smoking. In the United States, the economic consequences of smoking were estimated in 1976 to total $27.5 billion, of which $8.2 billion represented direct health care costs.[158] If governments and anti-smoking forces are to combat the powerful armamentarium of the tobacco companies, every strategy that holds promise for diminishing, and eventually eliminating, smoking in society must be explored.

One constellation of measures that has been used in only a limited way is that of fiscal and economic actions. These include policies on taxing; insurance incentives and disincentives; and economic subsidies.

Basic Reasons

The basic reasons for adopting fiscal and economic measures are:

1. To discourage smoking in general and smoking of more harmful brands in particular.
2. To decrease production of tobacco and to provide incentives for production of less harmful crops.
3. To discourage smoking by young people.
4. To finance smoking education, smoking cessation activities, and research on smoking.

Raising Taxes and Prices

Three types of taxing policies are described in *Guidelines for Smoking Control*--a general tax increase, differential taxes favoring low tar and nicotine cigarettes, and inclusion in the tax structure of a levy to finance smoking education, smoking cessation activities, and research.[159]

General Tax Increase. Raising taxes or prices seems to decrease consumption of tobacco.[160] According to the Royal College of Physicians of London, "when the price goes up, the consumption goes down.[161] Experience in the United Kingdom shows that five tax increases introduced from 1974 to 1978 were associated with a 9 percent reduction in cigarette sales and hastening the move away from high tar cigarettes.[162] In Belgium, the Federal Republic of Germany, Luxembourg, the Netherlands, India, and Italy, price increases reduced sales to some extent.[163] Granted that total per capita spending is more influential than prices on per capita cigarette consumption, as one study of 47 countries shows,[164] nevertheless higher taxes and consequently higher prices appear to restrain consumption.[165] There is, however, some evidence indicating that a price increase has only a temporary influence on sales and very little influence on consumption; this minimal influence seems to affet daily consumption levels rather than the prevalence of smoking.[166] Despite this evidence, the long-term effects of price increases introduced as part of a comprehensive program of smoking control are not known, and therefore this strategy should be tried as part of an overall program.[167]

Differential Taxes. A differential tax system favoring low tar, nicotine, and carbon monoxide brands is another approach to use of taxes to encourage less harmful cigarette smoking. A Canadian analyst suggests that raising taxes on tobacco products with high tar and nicotine contents could be accomplished by one or a combination of the following methods: increasing customs duties on imported products, increasing the licensing fee for tobacco dealers, increasing the excise tax and excise duty paid by manufacturers, increasing the corporation tax by making promotion costs non-deductible, and increasing the sales tax at the federal and provincial levels.[168] As *Guidelines for Smoking Control* recommends, high-tar cigarettes should become more expensive, rather than low tar cigarettes' becoming cheaper.[169]

New York City has enacted an ordinance imposing higher taxes on high tar and nicotine brands.[170] The Royal College of Physicians of London favors "introduction of differential taxation of tobacco products related to the latest information on health risks."[171] The United Kingdom introduced a tax differential in favor of pipe tobacco because pipe smoking alone is less harmful than an equivalent amount of cigarette smoking. The Royal College, however, expressed concern lest heavy cigarette smokers switch to pipes and, with continued inhaling of the pipe, increase their risk. The British tax law has now been changed to conform to the December 18, 1978 guidelines of the European Economic Council.

Objections may be offered to tax increases. One is the adverse impact on low-income smokers, possibly a blessing in disguise. Another is that increased taxes may have only a temporary influence on sales, affecting individual daily consumption but not the prevalence of smoking in a society, as mentioned. Nevertheless, despite these objections, more experience is needed with this strategy. A representative of the National Board of Health of Finland in describing the strong smoking control legislation in Finland stated candidly:

> One element in a truly health-oriented smoking control policy is missing--namely price policy. There is growing evidence on the importance of price policy as a determinant of cigarette consumption, especially among young people; and my personal guess is that the time will be ripe for new legislation on price policy in a few years. Meanwhile price policy measures that can be carried out under the current legislation will be used so far as politically possible.[172]

Finland had proposed two measures--obligatory price checks on cigarettes twice a year and differential taxation based on harmful substances. Both measures received broad approval, but action was postponed because overall revision of excise taxes was under consideration by a national commission.

Levy for Antismoking Activities. As mentioned earlier in connection with mandating health education, Iceland requires that the state tobacco monopoly spend two percent of gross tobacco sales on information on television, radio, in newspapers, cinemas, and other places warning against the hazards of smoking. In Finland 0.5 percent of tobacco tax revenue must be allocated in the national budget for health education, research, and evaluation in smoking control. In Venezuela, part of the tobacco tax is used by the National Tobacco Fund for development in the rural tobacco growing regions.[173] In the United States, the Health Secretary of the State of Pennsylvania advocates a penny a pack increase in the state cigarette tax to finance a cancer registry and the beginning of cancer screening, detection, and prevention programs.[174]

Insurance Incentives and Disincentives

Another form of economic measure affecting smoking is the growing practice by the insurance industry in the United States of extending discounts on life insurance premiums to nonsmokers. This innovation began in 1964, when the State Mutual Life Assurance Company of America offered a new life insurance policy exclusively to persons who, at the time of application, had not smoked cigarettes for a year. In 1976, the company extended nonsmoker discounts on premiums to all its individual non-pension life insurance policy holders who were nonsmokers. After 14 years' experience, analysis of mortality differences between insured smokers and nonsmokers revealed the tragic fact that the company's smoker policy holders were experiencing mortality almost two and half times that of their nonsmoker counterparts.[175] Since 1964, 54 companies have begun to offer premiums on life insurance policies to nonsmokers at lower than standard rates.[176] These companies, also, have all found the mortality rate among their nonsmokers much lower than that of their smoker policy holders. In fact, the insurance companies have been so struck by the magnitude of differences in mortality rates between smokers and nonsmokers that the industry has developed an inter-company study of this question.

While this experience is still considered limited, insurance executives believe that the mortality differences between smokers and nonsmokers must be taken into account for individual insurance underwriting and pricing purposes. A principle in establishing underwriting classifications is that the standard group should be the largest group, and those who are either preferred or sub-standard should be in the minority. According to the 1979 Report of the U.S. Surgeon General, nonsmokers are now the larger group, comprising 67 percent of the U.S. population, and new life insurance business reflects this dominance of nonsmokers.[177] Therefore, nonsmokers can properly be considered as the population that defines "standard" risks, and smokers should be defined as sub-standard. The experience of State Mutual Life Assurance Company with premium discounts and with offering high dividends to nonsmokers has shown that the net cost for nonsmoker life insurance policy holders can be, on a 20-year, interest-adjusted basis, 30 percent lower on the average than the cost for corresponding smokers.

The practice of giving insurance incentives based on nonsmoking, if widely adopted, may provide additional economic leverage in the struggle to combat the smoking epidemic. Insurance incentives and disincentives will enlarge the role of the insurance industry from that of actuarial and financial underwriter to that of active participant in the effort to change people's behavior to more healthful life styles.

Abolishing Subsidies for Tobacco

An important issue facing national governments and international agencies is the question of agricultural subsidies for tobacco production. The contradiction between providing incentives for tobacco production and the public health objective of smoking cessation is clear. Yet, tobacco cultivation is an important source of employment, cash income, and export earnings. As the Food and Agriculture Organization has pointed out, it is among the field crops with the highest return per unit of area, but has very high labor and capital input requirements which make it difficult to switch to other crops.[178]

Consumers in various countries have begun to call for a reduction, and ultimately abolition, of subsidies for tobacco. The first German nonsmokers' congress in 1974 recommended a progressive cut-back in subsidies for tobacco growers and use of the fund generated for a large-scale campaign against smoking in European schools. In 1980, this recommendation was renewed, and an appeal was sent to the Commission of the European Communities in Brussels for a ten percent reduction in subsidies for tobacco growers. In the United States, the National Commission on Smoking and Health, a body of distinguished citizens appointed to propose national policy on this subject, recommended that subsidy of tobacco in the present tobacco price support system in the United States be phased out over a ten-year period.[179] Payments should be made to farmers for not growing tobacco. Assistance should be provided to farmers to grow less harmful kinds of tobacco. Research on non-harmful uses of tobacco should be expanded. In June, 1981 the American Medical Association, reversing a 15-year policy, passed a resolution recommending the end of federal subsidies to the tobacco industry. The resolution was introduced by a third-year medical student.[180]

Without minimizing the complexities and problems of achieving a change in national and international economic policy on tobacco production, we may nevertheless heed these well-considered recommendations of concerned consumer groups. Both the WHO Expert Committee on Smoking and Health and the World Health Assembly have urged cooperation of international agencies to achieve crop diversification and development of substitute crops. Imaginative provision of economic incentives for production of alternative crops may be a way to begin to close the gap between economic policies and public health objectives.

153. C.F.R., Title 21--Food and Drugs, sec. 310.501.

154. Bull. Offic. Minis. de la Sante et de la Securite Sociale, No. 80/45, 29 November 1980.

155. Personal communication from Lars M. Ramstrom, Director General, National Smoking and Health Association, Sweden.

156. Legislative and Administrative Action for Control of Tobacco-Smoking in Finland, supra note 149 at 8.

157. Marketing and Distribution of Tobacco, Study prepared by the UNCTAD Secretariat, United Nations Conference on Trade and Development, 16 June 1978.

158. B.R. Luce and S.O. Schweitzer, "Smoking and Alcohol Abuse: A Comparison of Their Economic Consequences," New England Journal of Medicine, vol. 298, p. 570, March 9, 1978.

159. Guidelines for Smoking Control, 2d edition, edited by Nigel Gray and Michael Daube, pp. 123-125, International Union against Cancer, Geneva, 1980.

160. J. Peto, "Price and Consumption of Cigarettes: A Case for Intervention?" British Journal of Preventive and Social Medicine 28:241, 1974; M.A.H. Russell, "Changes in Cigarette Price and Consumption by Men in Britain 1946 to 71," British Journal of Preventive and Social Medicine: 27: 1, 1973.

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161. *Smoking OR Health*, A Report from the Royal College of Physicians of London, p. 119, Pitman Medical Publishing Co., Ltd., Tunbridge Wells, 1977.

162. *Guidelines for Smoking Control*, supra note 159 at 124.

163. *Tobacco-Hazards to Health and Human Reproduction*, *Population Reports*, Series L, No. 1, p. L-31, March 1979, citing United States Department of Agriculture, Foreign Agricultural Service, *World Cigarette Production and Trade in 1977*, Washington, D.C., USDA, July 1978 (Foreign Agriculture Circular FT-3-78).

164. A.L. Pakkala, "Living Standard Influences Degree of Cigarette Smoking, *Tobacco Reporter* 103 (7):55, 72, July 1976.

165. *Tobacco-Hazards to Health and Human Reproduction*, supra note 163.

166. Personal communication from Dr. Lars M. Ramstrom, Director General, National Smoking and Health Association, Sweden, citing a Swedish study: A. Barrol and L.M. Ramstrom, "Tobaksvanorna i Sverige" ("Smoking Habits in Sweden") in *Tobaksrokning eller halsa* (*Smoking or Health*), National Board of Health and Welfare, Stockholm, 1979.

167. Personal communication from Dr. Lars M. Ramstrom, Director General, National Smoking and Health Association, Sweden.

168. Patricia Buchholz, "Legal Aspects of the Control of Tobacco," Legal Medical Quarterly, Vol. 4, pp. 14-34 at 21, Spring, 1980.

169. Guidelines for Smoking Control, supra note 159 at 123.

170. Cigarette Tax Law Regulations of New York City Finance Administrator, Article 2-A, upheld in People v. Cook, 34 N.Y. 2d 100, 312 N.E. 2d 452 (1974).

171. Royal College of Physicians, supra note 161 at 120.

172. Legislative and Administrative Action for Control of Tobacco-Smoking in Finland, supra note 156 at 9.

173. Tobacco-Hazards to Health and Human Reproduction, supra note 163.

174. The Nation's Health, p. 4, December 1980.

175. Michael J. Cowell, Vice-President and Chief Actuary, State Mutual Life Assurance Company of America, "Insurance Incentives and Disincentives" in Health Education and Promotion, Agenda for the Eighties, A Summary of an Insurance Industry Conference on Health Education and Promotion (Heather J. Kotz and Jonathan E. Fielding, Eds.), sponsored by the Health Insurance Association of America, American Council of Life Insurance, 1980.

176. *Who Writes What in Life Insurance*, A National Underwriter Publication, 1981.

177. Supra note 175.

178. Food and Agriculture Organization, *Tobacco - Some Essential Facts* (undated).

179. *A National Dilemma: Cigarette Smoking or the Health of Americans*, Report of the National Commission on Smoking and Public Policy to the Board of Directors, American Cancer Society, Inc., Philip R. Lee, Acting Chairman, January 31, 1978. See also Walter S. Ross, "Let's Stop Exporting the Smoking Epidemic," *World Smoking and Health*, vol. 5, no. 3, pp. 29-32, Autumn 1980 (adapted from "Let's Stop Exporting the Smoking Epidemic," *Reader's Digest*, May 1980).

180. American Public Health Association, *Washington News Letter*, No. 6, p. 6, June, 1981.

181. Interpretation of the Norwegian legislation relies on three articles by Kjell Bjartveit, Chairman, National Council on Smoking and Health: "The Norwegian Tobacco Act," *Health Education Journal*, Vol. 36, No. 1, pp. 3-10, 1977. "The Norwegian Tobacco Act (Introduction)," *Scandinavian Journal of Respiratory Diseases*, Supp. No. 102, pp. 142-146, 1978 and "Governmental Action on Smoking and Health," *Bull. of the International Union against Tuberculosis*, vol. 53, no. 4, pp. 334-339, December 1978.

Mr. **Whittaker**. In your opinion, and I will ask the same question of Dr. Koop, in your opinion what would be the most effective, and I hate to limit this to the single best method, but in your opinion what would be the best method in which to recommend to the legislature that we could provide a disincentive to increased tobacco usage?

Dr. **Brandt**. I think that you have to split that up into long-term versus short-term. I think the long-term solution is going to be for us to understand why it is that people smoke, and to understand what can be done to assist people in stopping smoking. That, I think, is our best solution. I do think it has shown remarkable success thus far from a whole variety of ways that we must begin to work on.

In the short-term, I think our best approach is to continue to alert everybody constantly to the kinds of hazards they are running, and the costs to our basic economy, particularly to our health care expenditures, of cigarette smoking.

Let me turn to Dr. Koop.

Dr. **Koop**. I would agree with what Dr. Brandt has said, essentially. The words that you used, that we could legislate, I think limit what one's answer might be. Therefore, I would go along with Dr. Brandt that what we are doing, intensified, is the best way.

I think that the primary thing I would like to see accomplished if we could is to stop young people from starting to smoke, and the way to do that is to study the meanings or motivation, how they can avoid peer pressure and that sort of thing. But how that can be legislated, I do not know.

Mr. **Whittaker**. You mentioned in your testimony, Dr. Brandt, and I have forgotten which agency you related it to, but there were behavioral studies going into the origin of people beginning to smoke. Do you have any projected date or knowledge of when that study will be available?

Dr. **Brandt**. We have two sets going on, one in the National Institute of Drug Abuse, and I will ask Dr. Pollin to address that question.

Dr. **Pollin**. We have an ongoing series of studies, Mr. Whittaker. It is not any one single study. We have found, along with other agencies studying this problem, that with regard to young people, for example, techniques which point out to them that initiation of smoking actually limits their freedom of choice, rather than, as they often conceptualize it before they get started, thinking of this as a means of asserting independence, pointing out the limitation on subsequent freedom of choice, pointing out that they are subjected to peer pressure and helping them to resist peer pressure has been shown in a number of carefully controlled studies to be quite effective; and further, investigations of how to strengthen and apply this knowledge are currently under way, both with regard to cigarettes and other drugs.

Mr. **Whittaker**. Thank you. Thank you, Mr. Chairman.

Mr. **Waxman**. Thank you, Mr. Whittaker.

It has been suggested that a major benefit of cigarette advertising is the promotion of low tar and nicotine brands. The implication is that these cigarettes are somewhat safer.

Are the so-called light cigarettes safe?

Dr. Brandt. That question deserves two responses. There is no question that if a person switches from a nonlight cigarette to a light cigarette without changing their smoking habits, that the risk will be reduced. However, unfortunately the preliminary evidence is that many people who switch to the light cigarette first increase their consumption of cigarettes and second, inhale more deeply and therefore, expose themselves to the same dose of tobacco smoke and the carcinogens it contains.

So the answer to your question is yes, they are safer if the person continues to smoke in the same fashion.

Mr. Waxman. Is it also the case that even if they are safer, you would not consider them safe?

Dr. Brandt. No, sir. I think all of the evidence indicates that the only way you can reduce your relative risk from lung cancer, heart disease and other diseases associated with smoking is to quit smoking entirely.

Mr. Waxman. H.R. 5653 requires the disclosure of ingredients used in the manufacture of cigarettes. Does the department currently have a comprehensive listing of ingredients manufacturers use in the production of cigarettes?

Dr. Brandt. We do not now have a comprehensive listing of those ingredients. We are, however, in negotiation with representatives of the tobacco industry for their voluntary disclosure of those to us.

Mr. Waxman. How long have those negotiations been going on?

Dr. Brandt. They have been going on for several months.

Mr. Waxman. So as of this point, the cigarette industry has not disclosed the ingredients it uses in cigarettes to the department.

Dr. Brandt. We have not yet received that. However, I am convinced that the tobacco industry has negotiated with us in good faith and is making all attempts to be responsive to our requests.

Mr. Waxman. Would you agree that in the case of a product as dangerous as cigarettes, ingredient disclosure would be appropriate?

Dr. Brandt. I think that the question really is whether or not the ingredients are harmful. I think if the additives to cigarettes are safe, then the issue of whether or not they are revealed to the public is one of advertising and marketing considerations. I think on the other hand, if there are additives in cigarettes that are harmful, then there is no question in my mind but that they should be revealed.

Mr. Waxman. Do you support the provision in H.R. 4957 requiring listing of the carbon monoxide content of cigarettes?

Dr. Brandt. Yes, we do. I might say if I could, Mr. Chairman, on March 31, we will release the advance report from the health and nutrition examination survey, which shows the blood levels of carbon monoxide in smokers to be strikingly higher than that in nonsmokers, irrespective of location of sampling or other variables. It is clear that increased levels of carbon monoxide put you at greater risk for heart disease and for certain other illnesses.

It may be that this finding will lead us to other ways to understand the mechanism by which this occurs, but it is clear that there is a strikingly higher level of carbon monoxide in smokers than in nonsmokers.

Mr. **Waxman**. The NIDA Division of Research sponsored a meeting in 1979 to evaluate whether or not cigarette smoking was an addiction. What was the conclusion of the task force, and do you know of any recent evidence contradicting the task force conclusions?

Dr. **Pollin**. That task force concluded that cigarette smoking met all of the requirements to be considered as an addictive process, and to my knowledge, there has been no subsequent evidence which contradicts that finding.

Mr. **Waxman**. And would you describe for us the recent policy recommendation of the National Advisory Council on Drug Abuse regarding cigarettes?

Dr. **Pollin**. Yes. The Advisory Council recommended that the wording on the label be changed so that it include the words "Cigarette smoking is addictive and dangerous to your health."

Mr. **Waxman**. Dr. Brandt, the Office of Smoking and Health has been without a permanent director for a considerable period of time. When might we expect announcement of a new director?

Dr. **Brandt**. I hope that we will be able to announce the new director in the next few months. I must admit to you that the lack of having a permanent director at this time is my responsibility. Quite frankly, we have been trying to get this report out, and that has been the whole problem. We are beginning our search in some depth at the present time.

Mr. **Waxman**. What is the current and proposed 1983 budget for the Office on Smoking and Health?

Dr. **Brandt**. The current continuing resolution level for the Office of Smoking and Health is $1.9 million. Our 1983 request is for $2.1 million.

Mr. **Waxman**. I would like to ask that an article from the November 1981 issue of "Current Sweden," suggesting that the Government's smoking prevention activities have in fact reduced the percentive of adults and children who smoke, be made part of the record. I would like to share that with my colleagues.

[Pause.]

Mr. **Waxman**. If there is no objection, we will make it a part of the record and leave the record open if anyone should wish to insert any comments with regard to that study.

Hearing no objection, that will be the order.

[The following information was received for the record:]

Current Sweden

Published by
the Swedish Institute

SWEDEN LAUNCHES NEW ANTI-SMOKING OFFENSIVE:

GOVERNMENT-APPOINTED COMMISSION PRESENTS NEW PLANS FOR A 25-YEAR PROGRAM

BY PAUL NORDGREN

PAUL NORDGREN IS THE INFORMATION OFFICER OF SWEDEN'S NATIONAL SMOKING AND HEALTH ASSOCIATION.

The author alone is responsible for the opinions expressed in this article.

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The Swedish government began its anti-smoking work in 1963, when funds were appropriated for the first time to provide information on the harmful effects of tobacco. A more ambitious long-term program involving many different types of activities was presented in a 1973 report from a special research group on tobacco within the National Board of Health and Welfare (Socialstyrelsen). This report, which became internationally known as "Sweden's 25-year program against smoking," entailed a major intensification of informational work on the harmful effects of tobacco. It also resulted in legislation requiring the placement of warning texts and declarations of contents on tobacco packages. Somewhat later, another law was passed which imposed restrictions on tobacco advertising.

At the national level, information on tobacco has primarily been the responsibility of two bodies: the National Board of Health and Welfare and the National Smoking and Health Association (Nationalföreningen för upplysning om tobakens skadeverkningar, NTS). NTS is backed up by more than 20 non-profit organizations. Anti-tobacco campaigns are also carried out by other government agencies, such as the National Board of Education (Skolöverstyrelsen). At the regional level, they are handled by the county councils and are part of their preventive health care efforts. Important contributions to informational work are also made by certain private organizations, most notably the Swedish Cancer Society and the grass-roots non-smokers' association known as VISIR (Vi som inte röker = We who don't smoke).

"A smokeless childhood" is the motto for informational work aimed at preventing children and young people from starting to smoke.

From the time they first visit their local maternity care center, future parents are exposed to information on the harmful effects of smoking in connection with pregnancy and childbirth. This information is offered together with programs designed to help people stop smoking. Each county council organizes its own anti-smoking activities, but in recent years the National Board of Health and Welfare has arranged regional advanced training conferences to support and intensify these efforts.

Aside from the "parental training" on tobacco-related issues provided in this way to parents of small children, attempts are made to present tobacco-related issues to staff members within the public child care system, i.e. the pre-school.

Otherwise, campaigns targeted toward children and young people take place mainly within the school system. Instruction in Swedish schools is governed primarily by the contents of the official curricula issued by the Cabinet and Parliament. As early as the 1960s, the school curriculum then in force included directions on how to teach about alcohol, narcotics, and tobacco.

At present, a new official curriculum is going into effect. In this context, a review was undertaken not only of instruction regarding tobacco, but of the entire subject area in which tobacco is included — health education.

In 1981 the National Board of Education approved a special program on "Health Education in the Schools." This program states that the objective of school health education is to persuade growing children and teenagers to adopt habits which promote good health. To accomplish this, a wide range of activities is needed in the schools. In the long term, these activities should increase pupils' awareness of health matters. As part of this, the direct connections between health issues and social and environmental conditions should be made clear.

Health education is an integral part of instruction in the schools. It should take due account of the pupils' situation, capabilities, and background. It can be a part of all subjects. All school staff members should collaborate in health education. In teaching this subject, it is also vital to cooperate with other institutions outside the school system. Above all, good collaboration with the pupils' homes is a prerequisite for the success of health education work in the schools.

The new program will lead to a redoubling of efforts at both national and local levels to promote better health via the school system. For example, the National Board of Education will devote increased energy to providing teachers with advanced training on health matters, distributing discussional and informational materials to the schools, and persuading educational publishers to improve coverage of health issues in their textbooks. At the local level, each school is now being asked to establish its own operational plan, including a local action program for health education.

The fact that a program for health education was recently approved does not, of course, mean that such activities were previously absent from the schools. On the contrary, ever since the beginning of government-sponsored tobacco information, for instance, it has been an important continuous task for NTS and other organizations to produce teaching and informational materials for use in the schools. A current example of this is the teachers' manual that NTS published in 1980. Called "Teaching About Tobacco" (Att undervisa om tobak), it contains practical tips on ways of including tobacco-related issues in school instruction in a variety of different subjects.

Day-to-day instruction and the work of regular teachers are fundamental elements in the anti-smoking work of the Swedish school system. This does not, of course, exclude also arranging extra campaigns and special-subject days with an anti-smoking theme. Sometimes outside experts, for instance advisers from NTS, lecture in the schools as a supplement to the work of regular teachers.

Tobacco-related information to young people is also provided outside the schools, for example in various youth clubs. VISIR has a separate youth league, currently with about 10,000 members in school clubs throughout the country. During the past three years a special campaign has also been carried out in the mass media. Its aim has been to "advertise non-smoking." In other words, it has refrained entirely from mentioning the harmful effects of smoking and has instead simply presented "the non-smoking alternative" as something new, youthful, and modern. A separate organization has been formed for this campaign. Known as the Foundation for a Non-Smoking Generation, it is sponsored by the Swedish Cancer Society, NTS, VISIR, national and regional government agencies, insurance companies and other enterprises, etc. Using outdoor posters, advertising films in movie houses, campaign newspapers, postcards, radio and TV spots, decals, campaign sweatshirts, debates and school contests, endorsements by youth celebrities, rock concerts, and other modern marketing techniques, the foundation has made it fashionable not to smoke.

Work among adults

Informational activities are also the most important element of campaigns against the tobacco habit among adults. But only a small proportion of this information is disseminated via direct mass communications from national organizations to the public at large.

General information on the harmful effects of tobacco is provided to smokers via warning texts on tobacco packages and in tobacco advertisements. Both the National Board of Health and Welfare and NTS, as well as other organizations, also produce general informational material in the form of brochures, posters, decals, books, films, etc., which are available to anyone. Sometimes such materials have been distributed free in mass editions. A few years ago, for example, the National Board of Health and Welfare published a small brochure entitled "Advice to Smokers" (Råd till rökare) which was distributed free of charge via all pharmacies and post offices in Sweden.

Of course, television, daily newspapers, and other media sometimes conduct information campaigns about smoking on their own initiative. In the fall of 1980, for example, Sweden's largest morning newspaper, Dagens Nyheter, attracted a lot of attention with a series of articles about the medical effects of smoking, with the theme "Smoke or Live." It was illustrated with pictures by the famed Swedish medical photographer Lennart Nilsson. Information to the public also assumes other forms, such as when local VISIR clubs sponsor lectures, exhibitions at libraries, and the like.

But general information is not sufficient and crucial in actually persuading people to stop smoking. For this reason, the organizations have chosen to allot more funds to building up programs of local information. The idea is that all smokers in a given vicinity should be able to obtain information on smoking as well as help in quitting the habit — for instance via personal contacts with the staff of their local health care center or with people at their own workplaces. An important task is thus to recruit and train the "key people" who can carry out such work on a local basis. For a number of years, the National Board of Health and Welfare as well as many county councils have trained "tobacco information officers." These are people who — by virtue of their position as teachers or as officials of trade unions, study associations, or other "popular movements" — can organize informational activities and simple quit-smoking sessions, for instance in study circle form, as part of their daily work. Right now NTS is preparing a training program for doctors and nurses in occupational health centers and for safety delegates, so that they can provide information at workplaces and help people who want to quit smoking. For a number of years, the Swedish Cancer Society has worked on the issue of smoking within the health care delivery system, among other things so that all doctors and other health care personnel will include tobacco information and help people quit the habit as part of their ordinary contacts with patients.

The "key person" system is based on the concept that many smokers want to quit and can do so on their own, provided that they receive simple information on how to do so and can also obtain personal support and encouragement from their immediate environment during the initial, difficult period. Simple everyday efforts can yield large results, if they reach many people.

Some smokers may have such great difficulty in quitting that this "simple" program is not sufficient. To deal with the needs of "tough cases," special quit-smoking clinics have been established by a number of county councils. There are also similar privately run clinics. The clinics use several different methods, including medications, conversational therapy, hypnosis, etc.

Legislation

Sweden has also passed certain legislation dealing with tobacco. Its purpose is to provide information and to influence the attitudes and "social climate" that surround smoking.

A law on labeling of tobacco products specifies that all tobacco packages must carry a warning text. Cigarette packages are required to show one of 16 messages approved by the National Board of Health and Welfare. The most recent series of texts was approved in the spring of 1981 and will go into use no later than the beginning of 1982.

Cigarette packages also display a declaration of contents. It states the quantities of carbon monoxide, tar, and nicotine in the smoke from a cigarette of the brand in question. In order that the consumer may judge whether a particular level is above or below average, the declaration also includes the average for all brands sold in Sweden.

For practical reasons, other tobacco products besides cigarettes are not required to carry a declaration of contents including the above-mentioned quantities. On the other hand, all tobacco packages must be furnished with a warning text.

A law concerning restrictions on tobacco advertising stipulates that "particular moderation" should be observed in marketing tobacco products. This basic rule implies, among other things, that advertisers may not use methods which are "obtrusive or aggressive or which urge the use of tobacco."

In practice this means that numerous types of advertising may not be used for tobacco. The types that are completely banned are direct advertising (e.g. in mailboxes), organized distribution of free samples, prize contests, outdoor advertising, and the like. (Radio and TV commercials do not exist in Sweden). Tobacco ads are still allowed in newspapers and magazines, but are regulated by a number of rules. Such ads may not appear in weekly magazines and the like which are primarily intended for people under 20. Nor may tobacco advertisements appear on the sports pages of newspapers or in sports magazines. Full-page tobacco ads are not permitted.

In Sweden, one no longer sees tobacco advertisements of the glamourizing type using models, "status objects" etc. The law also stipulates that the warning texts required on tobacco packages must also appear in tobacco ads.

Smoking on the decline

Sweden has never been a heavy-smoking country. The increase in smoking which did occur following World War II ended around 1970. Since then, the percentage of people who are habitual smokers has declined among men and has not increased among women. In the past couple of years, a decline has also been noted among women.

Since 1976, NTS has conducted annual, nationally representative surveys of smoking habits. The results show a steadily declining percentage of adults aged 18-70 who are smokers (see Table 1).

Table 1. Smoking habits among adults each year, 1976-1980, in percent

	1976		1977		1978		1979		1980	
	M	W	M	W	M	W	M	W	M	W
Smoke daily	43	34	39	31	38	34	37	32	31	26
Smoke occasionally	8	7	9	8	11	10	9	7	10	7
Don't smoke	49	59	52	60	51	56	53	61	59	66
No reply	0	0	0	0	1	0	0	0	0	0

The number of daily smokers among men has fallen continuously during these five years, from 43% in 1976 to 31% in 1980. This decline has gone on since the early 1970s, when the proportion of men who smoked daily was around 50%. As for women, the number of daily smokers has remained stationary at roughly 35% since the early 1970s. During the past two years, however, there has been a steady drop to the current figure of 26%.

The percentage of men who smoke daily is, on the whole, larger than the percentage of women who do so. This is primarily because men, but not women, include pure pipe and cigar smokers. The percentage of men and women who smoke cigarettes is, however, the same: 26%. Pure pipe and cigar smoking increase with age. As a consequence, a larger percentage of older men than younger men smoke, while among women the smoking habit is the most widespread in younger and especially middle-aged groups (Cf. Table 2). One might also note that in young age categories, smoking is more common among women than among men, whereas the opposite is true of older age categories. There are also substantial differences between groups with different educational levels. For both men and women, smoking is considerably less common among the highly educated than among others.

Table 2. Smoking habits, 1980, by age and sex, in percent

Age	18-24		25-34		35-54		55-70		All	
	M	W	M	W	M	W	M	W	M	W
Smoke daily	25	27	31	32	31	30	33	16	31	26
Smoke occasionally	16	13	13	10	10	5	5	4	10	7
Don't smoke	59	60	55	57	58	64	63	80	59	66
No reply	0	0	1	0	1	0	0	0	0	0

The smoking habits of the youngest age categories have been surveyed since 1971 in large-scale studies conducted annually by the National Board of Education. These studies have shown the following trend (See Table 3). It should be observed that those who are classified here as "smokers" are those who answered Yes to the question "Do you smoke?" In other words, this category includes both daily and occasional smokers.

Table 3. Smokers in the nine-year compulsory school, percent

Year	13-year-olds		16-year-olds	
	Boys	Girls	Boys	Girls
1971	14	16	41	47
1974	10	12	31	45
1977	9	11	25	40
1979	6	8	21	34
1980	5	6	21	33

The decline in smoking has also been reflected in the sales figures for tobacco products during recent years. But although cigarette sales, for instance, are now clearly lower in terms of weight, the number of cigarettes sold is virtually unchanged. One explanation for this may be that the dwindling number of smokers nonetheless smoke more cigarettes than previously. This should be seen against the backdrop of a strong shift during the 1970s to small, less potent cigarettes. Those who still smoke appear to have become more "careful" in their choice of what to smoke.

New plans for the future

A parliamentary commission of inquiry presented a final report in 1981 entitled "The Declining Use of Tobacco — Final Report of the Commission on Tobacco." Its recommendations imply an endorsement and an augmentation of the thrust of anti-tobacco work to date. Above all, informational work should be given greater funding. But the commission also recommends some additional legislation.

Broader information

Most of the commission's recommendations for action thus concern informational activities. Existing information must be broadened in a number of ways, the commission believes. It is not enough to provide information on the harmful effects of tobacco, but instead other kinds of information are needed too. For example, information on different methods of quitting smoking, how to deal with various withdrawal symptoms, other ways of satisfying the needs previously met by smoking, etc. In the same way, information to young people must be broadened so that it helps them avoid starting to smoke.

In addition, there is a need for informational activities dealing with the damage that smoking may cause to young people, and making it clear by what mechanisms people are persuaded to begin smoking. In grades 4-6 of the compulsory school (ages 10-12), most pupils are firmly convinced that they do not want to start smoking, but only a few years later, many of them have nonetheless done so. They have not been prepared for the way it happens. They cannot see through habit-forming machanisms, and they have received too little training in how to choose their own attitudes and values and stand up for them when subjected to peer pressures.

In the school system, health education should be allotted an even stronger position than now. According to the commission, all teachers ought to receive basic training in health education, either as part of their regular undergraduate studies or through on-the-job courses. In addition, a more extensive supplementary training program in health education should be permanently established. It is important that there be positions for health educators both within the school system and the county boards of education.

School premises are among the public places (see below) included in the commission's proposal for a law on restricting smoking. But this is not sufficient. The schools are "the environment where teenagers in acute danger of beginning to smoke spend a very large part of their time." The school system thus bears a special responsibility. Rules on smoking vary from school to school. The commission proposes that the rules gradually be changed, on the basis of a nationwide recommendation on "tobacco-free schools."

The National Board of Education should receive greater funding for the purpose of providing grants to encourage youth organizations to undertake special anti-tobacco programs. These may assume the form of attitude-changing campaigns such as "A Non-Smoking Generation," or other less spectacular efforts as part of the regular activities of these organizations.

Long-term, patient informational work and treatment at the grass-roots level will yield good results, the commission believes. Smoking is, of course, already on the decline. If the commission's aims are fulfilled, fewer than 15% of Swedish adults will be using tobacco in 20 years. The "final objective" of the commission is that "use of tobacco be reduced to a level which is as close to total abolition as is practically possible."

A society that encourages reduced tobacco use

The commission has a clearly expressed desire to avoid restrictive measures as much as possible. But some restrictions are nonetheless necessary, it believes. One of the commission's demands is that advertising by the state-owned Svenska Tobaks AB and by all other tobacco companies be subjected to rules as strict as those already applicable to alcohol advertising in Sweden. In other words, a total ban on tobacco ads.

A separate law should be passed which places limitations on smoking in public premises (as in Finland). According to the commission, this is among the most urgently needed measures. The commission maintains that the purpose of such a law is that "no one should be subjected, against his or her will, to unpleasantness or health hazards due to tobacco smoke in public premises."

Included among public premises are, of course, such rooms as theater and movie house lobbies, post offices, railroad stations, etc., but also others like hospital waiting rooms and lounges, day care centers, schools, and national and local government buildings generally.

Through this recommendation, the commission would like to achieve mutual consideration between smokers and non-smokers. The proposal thus leaves open the option of establishing separate smoking rooms.

In principle, the aim of the proposed law applies equally to all rooms where groups of people congregate, even if they are not public places. As a supplement to the law, the commission thus suggests that the National Board of Health and Welfare and the National Board of Occupational Safety and Health issue joint national recommendations on smoking at workplaces.

Public health more important than tax revenues

The commission also discusses the dual role of the public sector — in disseminating information against the use of tobacco, while earning revenues from the tobacco tax. In the future, it will be necessary to change our attitude toward the tobacco tax. It should not be increased only when the national government needs more revenues. In the commission's view, the tax should be used as an instrument of public health policy. The prices of tobacco products should rise at the same rate as all other prices, and this should be accomplished through annual adjustments of the tobacco tax. The relative price of cigarettes in 1970 should be restored as soon as possible. This means that the commission advocates an immediate, rather dramatic price hike. For example, a package of ordinary cigarettes which cost 4.95 kronor* in 1970 would cost 13.50 kronor in 1980, compared with the current price of the same item in a tobacco shop — 10.60 kronor. But the commission does not regard it as a "drastic increase" to restore the 1970 price level in real terms. The proposed price hike would have been even greater if the commission had chosen to recommend that the cost of cigarettes be raised by the same percentage as the increase in food prices during the 1970s.

More important than this initial tax hike, however, is the principle itself: the tobacco tax should be used to assure that tobacco products never become cheaper in relation to other goods due to inflation.

This "health-motivated" use of the tobacco tax should be continued, even though in the long term it means that government revenues from the tax will decline because more and more people will quit smoking. In this way, the commission removes the basis for the argument that the government is guilty of a "double standard." But the commission points out that declining revenues from the tobacco tax are not a real loss to society. A reduction in the use of tobacco not only benefits public health, but also the national economy.

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*1 Swedish krona (Skr) = US $0.18 or £0.10 (aprox.)

The tax should also be used to promote a shift away from excessively strong cigarettes. Strong cigarettes should be subjected to even larger tax hikes than weak ones. The authorities should be given power to ban the very strongest cigarettes, the commission states.

Reduced tobacco use — a "must"

The commission's proposals for action have been sent out to various government agencies, private organizations, companies, etc. for their written comments, which are due by November 1, 1981. Only after that may the Cabinet decide whether to present a Bill to Parliament on the subject. This will perhaps occur no earlier than the fall 1982 session.

In any event, the recommendations of the commission will lead to intensified work to combat the use of tobacco, even if the Cabinet should choose not to go along with all the details.

The commission is aware that its recommended program of action will entail increased pressure on tobacco users. But the panel believes that there are no alternatives. The harmful effects of tobacco are alarmingly great. Knowledge of this is increasing all the time. This fact alone constitutes a source of heavy pressure on smokers. It is worse to leave them to their fate than for the public sector to implement an aggressive program of action against the use of tobacco.

Mr. WAXMAN. Mr. Bliley.

Mr. BLILEY. Dr. Brandt, in response to a question of my colleague, Mr. Whittaker, you indicated that statistics showed the drop in consumption. Do you have those statistics with you?

Dr. BRANDT. No, sir, I do not.

Mr. BLILEY. Will you submit them to us, because that is at variance with testimony we have heard before.

[The following information was received for the record:]

SMOKING PREVALENCE
IN
SELECTED COUNTRIES WITH SMOKING CONTROL ACTIVITIES

In many Western and developed countries the prevalence of cigarette smoking has declined over the past 15 to 20 years as a direct result of information and education programs aimed at discouraging smoking among various segments of the adult and adolescent populations.

In the United States, Canada and Great Britain these programs have been active since the early 1960's when the first scientific reports concerning the effect of cigarette smoking and tobacco use on health first became known. There have been considerable differences in the style and intensity of these programs by the various countries. Most have included some form of regulatory control in addition to educational and informational programs. Warning labels have been required on cigarette packages as well as in advertising and many countries restrict advertising in certain media. In addition most developed countries have active programs of information and education by government agencies as well as by voluntary health and community organizations. More recently other countries, most notably Sweden, have embarked on very aggressive programs to eliminate smoking among adolescents and have vowed to raise a generation of nonsmokers by the year 2000.

Rarely have these programs been instituted or carried out in isolation. In other words legislation requiring warning labels or other regulatory measures have occurred concurrent with, or in conjunction with, educational programs at the national, State and local level or with other actions taken by governments such as release of official reports or specific information programs designed to discourage smoking. These concurrent actions make evaluations very difficult when attempting to ascertain what effect, if any, an individual action by a government or other legislative body has had on consumption of tobacco.

It is clear however, that concerted, systematic actions by various governmental agencies and health programs have had an impact on smoking behavior in those countries where such measures have been implemented. For some segments of the population, such as adult females and adolescent girls, these declines have lagged several years behind their male counterparts. However, even these segments of the population are now showing substantial declines in prevalence.

Surveys have repeatedly observed that when attention is paid to the smoking and health problem, the public responds. When that attention is minimized, particularly at the national level, the public is less inclined to change their behavior and in some cases previous gains in the decline in smoking prevalence could be reversed.

Presented below are the results of smoking prevalence surveys among five countries which have some form of active smoking control program at the national level. Data are presented for varying periods so that a more comprehensive picture of the changes over time in smoking prevalence will be evident.

UNITED KINGDOM

Surveys of smoking in the United Kingdom have been conducted by a variety of organizations. The Tobacco Research Council provides data up to 1975, however more current information on prevalence is provided by the General Household Surveys which are officially supported and conducted by the U. K. government.

The percentage of smokers has declined among both males and females in the United Kingdom. In 1960, 61 percent of males and 42 percent of females were classified as smokers. By 1978, the percentage had declined to 45 percent males and 37 percent females. These declines are remarkably similar to those observed for many other countries, particularly in Canada and the United States.

The table below provides prevalence for various surveys and time periods for males and females in the United Kingdom.

Percentage of Smokers in the United Kingdom for Males and Females for Various Years, 1960 through 1978

	1960*	1965*	1970*	1975**	1978**
Males	61	54	55	48	45
Females	42	42	44	39	37

* Tobacco Research Council Survey
** General Household Survey

UNITED STATES

The percentage of the United States population who smoke cigarettes regularly is at its lowest point in many years. In 1980 slightly under one-third of adults were cigarette smokers. Over 36 percent of adult males smoked (36.7 percent) and only 28.9 percent of adult females smoked. Corresponding figures for 1970 were 43.5 percent males and 31.1 percent females. These declines are remarkable when they are compared to figures of smoking prevalence for 1955, the first year the government officially began collecting national smoking behavior information.

Similar declines have been observed among teenagers in the United States. The table below gives an overview of long-term trends of smoking behavior for adults in the United States.

Estimated percentage of regular cigarette smokers among adults, United States, 1955 through 1980

	1955	1965	1970	1980
Males	52.6	51.1	43.5	36.7
Females	24.5	33.3	31.1	28.9

WEST GERMANY

Overall, smoking among adults in West Germany has declined between 1965 and 1980. The percent of all adults who smoked was 46 percent in 1965 and this decreased to 40 percent in 1980. Declines have been more pronounced among males than among female cigarette smokers.

In 1965 61 percent of males were regular cigarette smokers compared to 24 percent for females. This had decreased to 50 percent among men in 1975 and further declined to 49 percent in 1980. In females, however, an increase was noted between 1965 and 1975 (24 percent to 29 percent) with no change noted between 1975 and 1980.

The table below presents data for adults for the three time periods.

Percent of Adult Cigarette Smokers Among
Men and Women in West Germany
for 1965, 1975 and 1980

	1965	1975	1980
Males	61	50	49
Females	24	29	29

CANADA

The prevalence of smoking among Canadians closely parallels that in the United States both in trends over time as well as the percentage of the adult population who smoke. Canadians, however, tend to have a slightly higher percentage of smokers than does the United States.

In 1966 slightly over 56 percent of the male population 20 years of age and older were regular cigarette smokers (56.7 percent). By 1975 this had declined to 45.6 percent and by 1979 had further decreased to 40.4. The decline among females, however, has not been as dramatic as among males, a trend often noted in other countries, including the United States. For females 34.0 percent were regular cigarette smokers in 1966. This decreased to 32.0 percent in 1975 and 30.7 percent in 1979.

Similar declines were noted among teenagers in Canada (ages 15 through 19). Boys tend to have slightly higher percentages of smokers in the teenage group compared to females, however, this gap is narrowing with girls currently smoking at approximately the same rate as boys (i.e., 29.5 percent versus 28 percent)

Percent of Regular Cigarette Smokers in the Male and Female
Canadian Population 20 Years of Age and Older

	1966	1970	1975	1979
Males	56.7	51.1	45.6	40.4
Females	34.0	33.6	32.0	30.7

SWEDEN

The percent of the adult population in Sweden who are cigarette smokers has declined over the last five year period, 1976 through 1980. This decline has been observed for both males as well as females. Males have shown a steady, consistent decline from 43 percent in 1976 to 31 percent in 1980. Corresponding figures for females are 34 and 26 percent. In 1970 the prevalence of daily smoking among smokers was 42 percent and for females 34 percent. The percentage of cigarette-only smokers among males was 26 percent in 1980, the same cigarette smoking rate as for females.

Adolescent smoking has also declined over the period 1975 through 1979, however girls are smoking at higher rates than boys, a trend noted in several other countries, including the United States. Twelve percent of 13 year old boys smoked in 1975 versus 13 percent of girls. By 1979 the corresponding figures were 6 and 8 percent respectively. In 1975 32 percent of 16 year old boys were smokers compared to 45 percent of girls. These figures had decreased to 21 and 34 percent for males and females respectively in 1979.

Table 1 and Table 2 give these as well as figures for intermittent reporting periods for the above groups.

Table 1 Percent of daily smokers in the Swedish adult population, ages 18 to 70 years of age, 1970 to 1980 *

	1970	1976	1977	1978	1979	1980
Males	42	43	39	38	37	31
Females	34	34	31	34	32	26

Table 2 Percent of adolescent student smokers ages 13 and 16 in Sweden for 1975, 1977 and 1979

	1975	1977	1979
Boys - age 13	12	9	6
Boys - age 16	32	25	21
Girls - age 13	13	11	8
Girls - age 16	45	40	34

*Males = includes smokers of pipes, cigars and cigarettes
Females = cigarette smokers only

Mr. **Bliley**. Dr. Koop, do you not think, in the final analysis, that the reason that warning labels have not been as effective as they might is that when people make the decision to smoke and they go to the machine, they are just interested in getting their brand. They have already made their decision. Much the same as you said that your father would never quit, they have made this decision and they do not stop to read the warning labels anyway.

Dr. **Koop**. My father has been dead for about 20 years. He never had the advantage of a warning label. I have no idea how he would have responded if he had seen one, especially if he had seen one that was specific and talked about cancer of the lung or emphysema.

Mr. **Bliley**. In fact, you do not know how anyone else would respond if they see one, do you?

Dr. **Koop**. No, I do not, but I do not think——

Mr. **Bliley**. Thank you, Dr. Koop. That is all of my questions.

Mr. **Waxman**. If the gentleman would yield to me——

Mr. **Bliley**. I would be glad to yield.

Mr. **Waxman**. Dr. Koop, did you want to say anything more?

Dr. **Koop**. I just wanted to say that I do not think we can say flatfootedly that the warning on cigarettes has not been effective.

Mr. **Waxman**. Mr. Whittaker.

Mr. **Whittaker**. Thank you, Mr. Chairman. I, too, wanted Dr. Koop to have an opportunity to finish his answer.

Mr. **Waxman**. Gentlemen, thank you very much. This testimony has been very helpful. I want to congratulate you on the work you are doing in this area, and I hope we will be able to work together to try to deal with this preventable cause of so many serious illnesses in this country.

Dr. **Brandt**. We will be pleased to work with you. Thank you.

Mr. **Waxman**. Without objection, the testimony of Glenn G. McNamara, M.D., president of the American College of Cardiology, will be made a part of the record. With no objection, that will be the order.

That concludes our business today. We will meet tomorrow at 9:45 in room 2123. We stand in recess.

[Mr. McNamara's statement and additional material submitted by Chairman Waxman follow:]

American College of Cardiology

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STATEMENT

on

H.R. 5653

"Comprehensive Smoking Prevention Education Act of 1982"

of

Dan G. McNamara, M.D., F.A.C.C.
President
American College of Cardiology

to

Honorable Henry A. Waxman

Chairman
Subcommittee on Health and the Environment
Committee on Energy and Commerce

March 5, 1982

Dear Mr. Chairman and
Members of the Subcommittee:

I am Dan G. McNamara, M.D., F.A.C.C., Professor of Pediatrics and Chief of the Cardiology Section, Baylor College of Medicine and Texas Children's Hospital. I am also President of the American College of Cardiology, a professional medical specialty society representing over 11,500 physicians, scientists and educators who specialize in diseases of the heart and circulatory system. ACC is dedicated to ensuring optimal care for persons with cardiovascular disease and those with the potential for developing cardiovascular disease and, through educational and socioeconomic activities, to contribute significantly to the prevention of cardiovascular disease. It is in my capacity as President of the College that this statement is made on H.R. 5653, the "Comprehensive Smoking Prevention Education Act of 1982."

One main concern of the College is whether consumers receive sufficient and accurate information on the demonstrated relationships between cigarette smoking and cardiovascular disease. The College believes that consumers are provided with insufficient information on the demonstrated relationships between cigarette smoking and cardiovascular disease and that this lack of information weakens a physician's role in altering a patient's smoking behavior.

As the Federal Trade Commission noted in its "Staff Report on the Cigarette Advertising Investigation" (May, 1981), which we commented on (attached), a "substantial portion of the public remains uninformed about the hazards of smoking," and that FTC tests "indicate that the (current) warning is neither noticed nor read by the vast majority of people." Even though the current warning indicates that the Surgeon General has determined that cigarette smoking is dangerous to one's health, 17% of all smokers and 24% of heavy smokers do not know that smoking is hazardous to health. Additionally, as noted, consumers themselves agree that the current warning is inadequate.

Why not provide the public with the type and quality of information sought? As the FTC report notes, nearly "two out of every three questioned during the 1978 Roper survey for the Tobacco Institute, believe that the current warning is not "adequate" and indicated they preferred a health warning that describes the specific health risks of smoking."

A 1978 Gallup survey of smokers and nonsmokers found that 32% were not aware of the statistical relationship between cigarette smoking and heart attack; that 37% of smokers did not know this relationship; and that among heavier smokers, 40% did not know the increased risk for heart attack associated with cigarette smoking. The 1979 Chilton Study, conducted by the FTC, found that 25% of the general population and 31% of smokers did not know that smoking greatly increased their risk of heart attack despite research that concluded that it doubles a person's risk of heart attack. In addition, consumer knowledge of the relationship among cigarette smoking, birth control pills and heart attack is low, despite the fact that women who smoke and take birth control pills have approximately ten times the risk of a heart attack of women who do neither.

Therefore, the College agrees that the current cigarette warning is not effective relative to the public's need to know and act on the strong scientifically-validated statistical relationship between cigarette smoking and cardiovascular disease. The College agrees with the need to improve on the type and content of the required cigarette warning labels.

Therefore, in reviewing the FTC report and its conclusions, the College endorses the concept of rotational warnings as being more effective than the current warning.

The College believes that the labeling approach and specific warnings contained in H.R. 5653 (as modified below for scientific acceptability) will assist consumers in making conscious, more informed decisions about smoking, because they will have more definitive information on the specific health consequences of smoking. This type of information, also,will assist cardiologists, other physicians and other health professionals in communicating the risks of smoking to their patients.

The College would recommend that "Warning: Cigarette Smoking is a Major Cause of Heart Disease" be amended as follows: "Current scientific evidence indicates that Cigarette Smoking is a Major Risk Factor for Coronary Heart Disease." The College would also recommend that "Cigarette Smoking may cause Death from Heart Disease, Cancer or Emphysema" be revised as follows: "Current scientific evidence indicates that cigarette smokers are predisposed to suddent death," and "Current scientific evidence indicates that there is a significant relationship between cigarette smoking and heart disease, cancer or emphysema."

In addition, the College believes that one aspect of the wording of the bill relating to the coordination of research, conduct of research and the authority of the Secretary to carry out the provisions of this bill through grants, may need clarification to avoid duplication with research on cigarette smoking effects being conducted by NHLBI, NCI and other Institutes at NIH. If coordination means the implementation of a systematic exchange of information on the research being supported by different agencies, this would be useful. If, however, the purpose is to provide the Office of Smoking and Health with authority to direct the research of Institutes, the College believes it would be counter-productive and undesirable.

However, authority to conduct types of research that do not fall clearly under the authority of the categorical Institutes could be appropriate for the Office of Smoking and Health. Examples of such would be in monitoring national trends of cigarette consumption in different age groups, surveillance of the composition of tar, nicotine, carbon monoxide and other potentially harmful constituents of cigarettes and maintaining the periodic reporting of new research findings.

In addition, the College also believes that the Congress should review all the current material on the connection between cigarette smoking and the costs to society through increased medical costs and reduced productivity in order to provide a basis for further cigarette smoking prevention efforts.

I trust that these comments that relate to our support for your efforts in this area will be of assistance to you and the Committee. We would be pleased to provide you with any other assistance.

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Alcohol, Drug Abuse, and
Mental Health Administration
National Institute on Drug Abuse
5600 Fishers Lane
Rockville MD 20857

March 15, 1982

The Honorable Henry A. Waxman
Chairman, Subcommittee on Health and
the Environment
Committee on Energy and Commerce
U.S. House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

I wanted to thank you for the opportunity of serving on the panel headed by Dr. Edward Brandt, Assistant Secretary for Health, at your March 11 hearings on cigarette labeling. As you requested, I am submitting as a supplement to the official record a copy of the final report from NIDA's 1979 "Technical Review on Cigarette Smoking as an Addiction" and a copy of the resolution that was passed last September by our National Advisory Council on Drug Abuse.

If I can provide any further information on this very important topic, please do not hesitate contacting me.

Sincerely yours,

William Pollin

William Pollin, M.D.
Director
National Institute on Drug Abuse

Enclosures

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Alcohol, Drug Abuse, and
Mental Health Administration
National Institute on Drug Abuse
5600 Fishers Lane
Rockville MD 20857

Resolution on Cigarette Labeling

The following Resolution, introduced by Councilmember Morris A. Lipton, M.D., was passed unanimously by Council on September 23, 1981.

> "The National Advisory Council on Drug Abuse strongly recommends to the Surgeon General that words be added to the warning on cigarette packages. The label should read 'The Surgeon General has determined that cigarette smoking is addictive and dangerous to your health.'"

NATIONAL INSTITUTE ON DRUG ABUSE

TECHNICAL REVIEW ON CIGARETTE SMOKING AS AN ADDICTION

Thursday and Friday, August 23 and 24, 1979

FINAL REPORT

Moderators:

Norman A. Krasnegor, Ph.D.
Pierre F. Renault, M.D.

INTRODUCTION

This report summarizes the Technical Review on Cigarette Smoking as an Addiction that took place on Thursday and Friday, August 23 and 24, 1979. This task force meeting was sponsored by the National Institute on Drug Abuse (NIDA), Division of Research, to evaluate the scientific evidence that exists for and against cigarette smoking as an addiction and to arrive at a consensus on this question based on the available scientific evidence.

Macro Systems, Inc., assisted NIDA in the conduct of the meeting. This summary report was written by Dr. Charles R. Schuster of the University of Chicago. The Appendix presents the agenda for the meeting and a list of the participants with institutional affiliations, addresses, and telephone numbers.

TECHNICAL REVIEW ON CIGARETTE SMOKING AS AN ADDICTION: REPORT ON THE TASK FORCE ON SMOKING

1. STATEMENT OF THE PROBLEM

Cigarette smoking is the single most important environmental factor contributing to early death and disability in the United States. In 1978, 33 percent of the population, age 17 and over, were current cigarette smokers. Induction into smoking begins in the great majority of individuals before 21 years of age and in over half, before 18 years of age. Despite teenagers' disclaimers that their cigarette smoking can be voluntarily curtailed, the onset of smoking at this age results in a high probability of sustained lifelong use. Of teenagers who smoke more than one or two casual cigarettes, 85 percent escalate to a lifestyle of regular smoking. It is estimated that only 2 percent of smokers consume cigarettes on an occasional basis. In general, the number of cigarettes consumed by smokers averages 30 per day. Each inhaled puff of cigarette smoke delivers a dose of drug to the brain resulting in 50-70,000 such doses per person every year. There is no other form of drug-taking that occurs with such regularity and frequency.

Despite widespread public acknowledgement of the health consequences of smoking and the documented statements made by the great majority of smokers that they would like to quit, a very large number have been unsuccessful in their attempts. More specifically, of the 33 percent of Americans, age 17 and over, who are smokers, three out of four express a desire to quit. Indeed, over 60 percent of these current smokers claim to have made at least one serious attempt. During 1978 alone, over 30 percent (17 million) attempted to quit smoking. Unfortunately, the long-term probability of success on any given quit attempt is only 20-25 percent. Even those who seek professional help and are successful in completing an organized smoking cessation program show a 60-80 percent return to smoking within one to two years. Furthermore, the probability of relapse over time to cigarette smoking shows remarkable similarity to that observed with alcohol and heroin use. It is of interest to note that individuals who use both heroin and cigarettes report that they would find it easier to give up heroin than cigarettes.

2. DEFINITION OF ADDICTION AND AN ADDICTING SUBSTANCE

Before proceeding to consider whether current evidence allows the categorization of cigarette smoking as an addiction, we must define this term. In its broadest sense, addiction is a state characterized by the repeated ingestion of a substance that is toxic and leads to undesirable social consequences. This definition encompasses other terms often used to describe nonmedical drug use, such as abuse, habituation, and dependence. An addicting substance is one that has: (1) pharmacological properties leading to compulsive use; (2) a capability of producing organ and/or behavioral toxicity; and (3) a use pattern associated with adverse social consequences. In addition, this term is generally applied when the ingestion of such substances is viewed by a large segment of the society as undesirable.

3. ANIMAL STUDIES

There have been two general approaches to obtaining data to determine whether tobacco can be viewed as an addicting substance: (1) the study of cigarette smoking per se, and (2) studies of nicotine alone, since its pharmacological actions suggest that it is the most likely component in tobacco leading to its repetitive use. A variety of behavioral studies of the action of nicotine have been carried out in animals. One of the methods used in the animal laboratory to determine the addiction potential of drugs is the drug self-administration procedure. There is a good correspondence between drugs that are self-administered by laboratory animals and those that are common drugs of addiction in humans. This generality holds true for drugs within the opioid, sedative, and psychomotor stimulant class. Furthermore, drugs which are not addictive substances are not self-administered by animals.

Several studies have demonstrated that intravenous nicotine can maintain self-administration behavior in rats and monekys, but the environmental conditions under which this occurs appear more limited than with drugs such as opioids or psychomotor stimulants. Nicotine appears to be a substance which has the pharmacological properties necessary to lead to its repeated ingestion. Doses of nicotine which are otherwise self-administered may even function as punishers to suppress behavior under certain environmental conditions. The existence of these aversive effects of nicotine may account in part for changes in human cigarette smoking after variations in nicotine content or treatment with nicotine or nicotine antagonists. Effects of pharmacological treatment with nicotine antagonists can alter smoking behavior in humans and suppress nicotine self-administration in animals. Clearly, further studies are needed to determine the range of conditions over which nicotine will maintain or suppress behavior, the critical factors controlling these properties of nicotine, and the ways in which pharmacological treatments can alter smoking behavior or self-administration of nicotine.

There has also been limited research on actual cigarette smoking in animals. The majority of monkeys given free access to cigarettes will smoke, but in a rather sporadic fashion. Certain animals, however, will regularly smoke and obtain nicotine blood levels comparable to those obtained by human cigarette smokers.

These studies of smoking behavior and nicotine self-administration in animals support the view that nicotine is the primary constituent in cigarettes that maintains their compulsive use.

4. HUMAN STUDIES

Although it is still not unequivocally clear that nicotine is the only agent responsible for the development of physical dependence on tobacco or the maintenance of smoking behavior, it is certainly the leading contender. Proof of nicotine's primary role still awaits a demonstration that the cigarette withdrawal syndrome is similar to the nicotine withdrawal syndrome. However, there have been several studies implicating nicotine's role in the subjective aspects of smoking as well as the frequency. For instance, subjects have been given cigarettes without nicotine (or with greatly diminished nicotine) and they fail to report their customary enjoyment of smoking. Some subjects seem to enjoy the low-nicotine cigarettes, but it is possible that they are able to extract more nicotine by changing their manner of smoking (e.g., increased inhalation). Another type of experiment involves delivering nicotine to subjects via another route of administration besides inhalation. Subjects of these experiments do not experience the usual degree of satisfaction that they get from their customary cigarettes, although in some instances they do report some satisfaction from the nicotine.

Further evidence implicating the role of nicotine in cigarette smoking is provided by human studies that have directly measured cigarette smoking behavior. These studies have shown: (1) increases or descreases in nicotine dose in cigarettes are associated with compensatory changes in smoking which tend to maintain nicotine blood levels within certain limits; (2) manipulation of urinary excretion of nicotine either upwards or downwards is also associated with compensatory changes in smoking which tend to maintain nicotine blood levels within certain limits; (3) pretreatment with nicotine (intravenously or orally) produces compensatory decreases in smoking; and (4) pretreatment with a nicotine antagonist produces elevation in smoking.

5. PHYSICAL DEPENDENCE AND TOLERANCE

As with other classic drugs of abuse such as the opioids and sedatives, tolerance and physical dependence are important characteristics of a drug because they may exacerbate the user's tendency to continue its use. Tolerance, for instance, reduces the pharmacological effects of drugs and may lead to more frequent administration of higher doses of the drug, which in turn may produce greater risks of toxicity or untoward effects on the user.

Tolerance has been demonstrated for the effects of smoking cigarettes and also to the effects of many of the components of cigarettes. Nausea and dizziness is common among novice smokers, but disappears with experience. Metabolic tolerance can be demonstrated in smokers to various components of cigarette smoke (e.g., nicotine, "tar", benzypyrene, carbon monoxide, other compounds) as well as to a wide variety of drugs such as barbiturates and chlorpromazine. Receptor tolerance can be demonstrated to some extent to certain components of tobacco smoke. For instance, nicotine given intravenously has been shown to have a greater physiological effect upon nonsmokers than on smokers. Similarly, tolerance to behavior, such as activity level, has been demonstrated in a wide variety of animal studies. Behavioral tolerance to nicotine also has been demonstrated in animals, i.e., animals learn to compensate for decrements in performance while under the influence of the drug.

There is also evidence of physical dependence to tobacco. Clear signs of withdrawal appear when heavy smokers abruptly quit, although there appears to be considerable variability in its manifestation. When a smoker stops smoking suddenly, he/she frequently shows a decrease in heart rate, sometimes in blood pressure, and a decrease in excreted epinephrine and norepinephrine and its metabolities. Other endocrinological changes may also occur. Furthermore, there is a decrease in mean EEG frequency, an increase in appetite and weight, and an impairment in performance on psychomotor tasks and in concentration. Disturbances in arousal and sleep may occur; and anxiety, irritability, and aggression increase. Finally, there is an increase in craving for smoking which decreases with time. Despite this reported increase in craving, the extent to which physical dependence on tobacco or nicotine influences the frequency of smoking remains to be determined. Human experiments indicate that, following a period of deprivation, irritability and the probability of smoking increase.

In summary, although experimental findings are limited, it is clear that tolerance and physical dependence do occur with cigarette smoking, but the role they play in the maintenance of smoking remains to be explored.

6. CIGARETTE SMOKING AS AN ADDICTION

It would seem clear from the evidence presented that tobacco smoking produces pharmacological effects which often lead to compulsive use. As stated previously in our definition of addiction, it is necessary to demonstrate that an addicting substance produces organ and/or behavioral toxicity. Although the acute behavioral effects of smoking are mild in comparison to those produced by most addicting substances, the multiple deleterious health effects of cigarette smoking, including mortality and disability and their attendant social consequences, are now well established. Few question that the regular use of tobacco leads to a wide range of organ toxicity.

7. CONCLUSIONS

It was the opinion of the group after reviewing the evidence regarding the compulsive use, the toxicity, and the adverse social consequences, that cigarette smoking behavior should be considered a form of addiction, and tobacco in the form of cigarettes, an addicting substance.

8. IMPLICATIONS REGARDING CIGARETTE SMOKING AS AN ADDICTION

(1) The group concluded that cigarette smoking is an addiction. The broadest implication of this conclusion is that cigarette smoking should now be re-examined in light of the range of policy considerations which are presently considered germane to the classic forms of drug addiction such as addiction to the narocitics, sedatives, stimulants, or alcohol.

(2) Given that cigarette smoking is considered an addiction, it could be contended that it should be viewed as a disease. Such a categorization would allow the application of the methods and conceptual formulations of public health to be applied to the smoking problem.

(3) Basic research efforts should be focused on the analysis of cigarette smoking behavior in humans. Research programs should elucidate the behavioral and pharmacological variables which influence both the maintenance and elimination of cigarette smoking behavior. The role of nicotine in the initiation and maintenance of cigarette smoking should be explored with special attention to other components of smoke that may modulate its effects.

(4) Research on psychosocial influences should not be deemphasized, but projects should be sought which try to evaluate psychosocial and pharmacodynamic influences within the same context.

(5) Basic research efforts should be focused on the analysis of nicotine self-administration in laboratory animals. The range of conditions necessary for the establishment, maintenance, and elimination of nicotine self-administration should be studied.

(6) Research efforts should be directed toward establishing an adequate animal model of cigarette smoking behavior.

(7) Research should be undertaken to establish valid, low-cost, and preferably noninvasive measures of cigarette smoking to be used as outcome measures in clinical treatment research. Examples of such measures include urinary nicotine or expired-air CO levels.

(8) Physiological and psychological changes that occur during repeated administration (tolerance and physical dependence) and upon smoking cessation (withdrawal) should be characterized in detail. The contribution of these changes to the clinical phenomenon of relapse to smoking should be established.

* * * *

This report has summarized the Technical Review on Cigarette Smoking as an Addiction Additional information about the meeting may be obtained from Dr. Pierre Fenault, NIDA Division of Research.

APPENDIX (1)

TECHNICAL REVIEW ON CIGARETTE SMOKING AS AN ADDICTION

AGENDA

Thursday, August 23, 1972
Parklawn--Conference Room M

9:00 - 9:15	Opening Remarks	Dr. Krasnegor Dr. Renault
9:15 - 9:30	Statement of Purpose	Dr. Schuster
9:30 - 9:50	Criteria for Definition of Human Substance Abuse	Dr. Jasinski
9:50 - 10:10	An Historical View of Cigarette Smoking as an Addiction	Dr. Jaffe (unable to attend)
10:10 - 10:30	Public Health Approaches To Dependency Control	Dr. Mandell
10:30 - 10:45	Coffee Break	
10:45 - 11:05	Methods to Quantify and Predict Abuse Liability of Nicotine, Behavioral Analysis of the Reinforcing Properties of Cigarettes	Dr. Griffiths
11:05 - 11:25	Nicotine Self Administration in Monkeys	Dr. Goldberg
11:25 - 11:45	Nicotine Dependence as Revealed by Tolerance and Withdrawal	Dr. Jarvik
11:45 - 1:00	Lunch	
1:00 - 1:20	The Role of Nicotine in Maintained Use of Cigarettes	Dr. Kozlowski
1:20 - 1:40	Cigarette Smoking in the Wider Context of Substance Abuse and Habitual Behavior	Dr. Levison
1:40 - 2:10	Economic and Public Policy Aspects of Addiction	Dr. Harris
2:10 - 2:30	Coffee Break	
2:30 - 4:00	Discussion of Scientific Evidence for and Against Cigarette Smoking as an Addiction	All Participants
4:00 - 5:00	Strategy Session--Objectives, Division of Responsibility, and Assignments for Day Two of the Meeting	All Participants

Friday, August 24, 1972
Parklawn--Conference Room M.

9:00 - 12:30	Development of a Position Paper Summarizing the Evidence For and Against Cigarette Smoking as an Addiction	All Participants
12:30 - 1:30	Lunch	
1:30 - 4:30	Discussion of Programmatic and Policy Implications of the Position on Cigarette Smoking	All Participants

APPENDIX (3)

TECHNICAL REVIEW ON CIGARETTE SMOKING AS AN ADDICTION

PARTICIPANTS

Thursday and Friday, August 23 and 24, 1979
Parklawn Building—Conference Room M

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[Whereupon, at 9:55 a.m., the subcommittee was adjourned.]

COMPREHENSIVE SMOKING PREVENTION EDUCATION ACT OF 1982

FRIDAY, MARCH 12, 1982

House of Representatives,
Subcommittee on Health and the Environment,
Committee on Energy and Commerce,
Washington, D.C.

The subcommittee met, pursuant to notice, at 9:50 a.m., in room 2123, Rayburn House Office Building, Hon. Henry A. Waxman (chairman) presiding.

Mr. **Waxman**. The meeting of the subcommittee will please come to order. This morning begins the third and final day of public hearings on the Comprehensive Smoking Prevention Education Act. Yesterday we heard from the Department of Health and Human Services, which on behalf of the administration indicated their support for this legislation.

The administration now joins a large and growing number of Congressmen, Senators, and public health organizations in support of a bill of immense importance to the public health of this country.

I would like at this time to express the subcommittee's appreciation for the many letters of support we have received from voluntary health organizations all across the country. These letters, in addition to the written statements of organizations which due to the time constraints were unable to present oral testimony, will be made a part of the record at the conclusion of our hearing.

Today we set aside time to hear from representatives of the tobacco and cigarette manufacturing industry. Witnesses invited to testify were recommended by the Tobacco Institute, a Washington-based trade association.

Our first witness is Edward A. Horrigan, chairman and chief executive officer of the R. J. Reynolds Co. He will be accompanied by Horace R. Kornegay, Samuel B. Witt, and Larry Light.

Would you please come forward?

Before recognizing Mr. Horrigan for his statement, I understand that Mr. Kornegay would like to make an opening statement. I am pleased to recognize you at this time and welcome all of you to our subcommittee hearing.

STATEMENT OF EDWARD A. HORRIGAN, JR., CHAIRMAN AND CHIEF EXECUTIVE OFFICER, R. J. REYNOLDS TOBACCO CO., ACCOMPANIED BY HORACE R. KORNEGAY, CHAIRMAN, THE TOBACCO INSTITUTE, INC.; SAMUEL B. WITT III, VICE PRESIDENT, SECRETARY, AND GENERAL COUNSEL, R. J. REYNOLDS TOBACCO CO.; AND LARRY LIGHT, PH. D., EXECUTIVE VICE PRESIDENT, TED BATES WORLDWIDE, INC.

Mr. KORNEGAY. Thank you very much, Mr. Chairman.

I appreciate the opportunity to introduce the spokesman for our panel. It is a privilege for me to introduce to you and the subcommittee the chairman of the executive committee of the Tobacco Institute, Edward A. Horrigan, Jr. Mr. Horrigan is also the chairman and chief executive officer of the R. J. Reynolds Tobacco Co. and executive vice president and director of R. J. Reynolds Industries.

He is a graduate of the University of Connecticut and the Harvard Business School's advance management program. During the Korean conflict, he served as an Army infantry officer and received the Silver Star, Purple Heart, and combat infantryman's badge.

He entered the business world in 1954 with Procter & Gamble and then later became vice president of Thomas J. Lipton, Inc. He then moved on to become chairman of the board and president of the Buckingham Corp. He joined R. J. Reynolds Tobacco International, Inc., in 1978 as chairman and chief executive officer and was promoted in 1980 to chairman, president and chief executive officer of R. J. Reynolds Tobacco Co.

Mr. Horrigan has received many business and philanthropic awards, among which are included the prestigious Horatio Alger Award, the American Jewish Committee's Award, and the Pop Warner All American Award for service to youth.

Mr. Horrigan's activities as a civic leader include director of Salem College, the board of visitors of the School of Business Administration at the University of Connecticut, and as an honorary board chairman of the Touchdown Club of America.

Mr. Chairman, it is a pleasure to present to you and the subcommittee Mr. Edward A. Horrigan, Jr.

Mr. HORRIGAN. Good morning, Mr. Chairman. Mr. Kornegay has introduced me to the committee and you have introduced those members to the panel who will be assisting me here in our presentation this morning.

My name is Edward Horrigan. I am chairman and chief executive officer, R. J. Reynolds Tobacco Co. and the chairman of the executive committee of the Tobacco Institute, an association of tobacco manufacturers.

With me today is Horace Kornegay, chairman of the Tobacco Institute; Larry Light, executive vice president, Ted Bates, Inc.; and Sam Witt, vice president, general counsel and secretary, R. J. Reynolds Tobacco Co.

We are here at your invitation to express the industry position on H.R. 5653, the Comprehensive Smoking Prevention Education Act of 1982.

I respectfully submit that this bill is unnecessary because virtually everyone is aware of the claimed dangers of smoking. The bill also represents a waste of taxpayers' money because it would require the establishment of a bureaucracy that will serve no useful purpose.

The level of awareness about the alleged associations between smoking and health far exceeds public awareness of most, if not all, major contemporary issues facing this Nation.

At least 90 percent of the public is aware of the claims made about smoking and health which demonstrates that the Federal Cigarette Labeling and Advertising Act is working. The facts clearly show that people are in a position to make a free and informed choice on whether or not to smoke.

Given this, why substitute a novel and unproved system for the present law? Why is there a need to establish yet another Government agency to administer yet another bureaucratic web of regulations targeted at an industry which manufactures and markets a legal product? In effect, this bill is a punitive measure directed against the manufacturers of a lawful product and appears designed to lead toward the prohibition of smoking.

Let me review some of the premises used to support this bill and the charges leveled at the tobacco industry.

A number of very broad, sweeping statements relating to smoking and disease are included in the particulars of the bill. Certainly, there are questions raised by statistical associations relating to smoking and health which must be answered. But the truth is that all of the statements presented as established fact in this bill have been challenged by the research findings of many eminent scientists, some of whom you will hear today.

There are many more expert witnesses who would have been willing to testify about the broad range of so-called "findings" listed in section 2. Just Wednesday, we were told by a member of your staff that only 4 of the over 30 expert witnesses willing to testify could appear. Unfortunately, 1 day is far short of the time required to adequately inform the committee. We will, nevertheless, do our best with the limited time made available to us and at this time I request that the statements of the experts denied the opportunity to testify be entered into the printed record.

Mr. WAXMAN. Without objection, we will have all of the statements made part of the record. We have had an enormous amount of interest from public health groups who have requested to testify in support of the bill and you have people that wanted to testify against the bill. We will put them all in the record so members of the subcommittee will have a chance to see them.

Mr. HORRIGAN. In 1969 when the Federal Cigarette Labeling and Advertising Act was amended, the full committee of which your subcommittee is a part held extensive hearings. The full committee concluded that "nothing new has been determined with respect to the relationship between cigarette smoking and human health since its hearings in 1964 and 1965," and that "the arguments pro and con with respect to cigarettes are the same now as then, though supported by a larger statistical base." That is as true today as it was in 1969.

After three decades of investigation and millions of dollars invested, the smoking and health controversy remains unresolved. The net result of all of this effort has been that no causal link between smoking and disease has been established.

Yet consider the language of some of the warning labdels proposed in this bill. "Cigarette smoking is the number one cause," "is a major cause," "will injure." What credibility can such statements *have in view of the millions of people who have smoked throughout* their lifetimes and have not gotten any of the ailments mentioned, and the millions who have not smoked who have gotten them.

The tobacco industry is recognized as a leader in seeking the answers to the questions regarding smoking and health. In the past three decades, the industry has committed, without fanfare, over $100 million for unrestricted smoking and health research, spending greater than the tobacco-related research expenditures of all the voluntary health agencies combined.

As worded, the bill purports to settle by congressional edict evolving medical and scientific controversies. Therefore, it may divert scientific talent and resources from the basic research necessary to solve the enigmas of chronic disease.

We are aware that there have been some effort to build support for this bill with claims that its provisions would serve as a deterrent to smoking among young people, and that industry advertising and promotional practices are intended to encourage youthful smoking.

Such charges are without foundation.

Last Friday, two witnesses speaking in support of this bill—Mr. Keeshan and Mr. Forsyth—both acknowledged that peer pressure and not our advertising provides the impetus for smoking among young people. Expert testimony this afternoon will show this belief is correct.

Our advertising is targeted at smokers and is intended to encourage switching from competitive brands. The available evidence clearly shows that our advertising is not designed to attract new smokers of any age and is not having that effect.

Our industry has acted responsibly in the past and we see no reason this bill is needed to further regulate our advertising practices.

At this point, I will return to specific provisions of this bill. Our objections to them are stated in detail in our written submission to the committee, so I will only highlight some of them now.

The rotational warning labeling requirements this bill proposes are technically unworkable and unwarranted. There are now approximately 200 cigarette brands and brand styles on the market. With new brands being added and old ones withdrawn regularly, and vast differences in sales volume and advertising patterns, it would be virtually impossible for cigarette manufacturers or the FTC to insure compliance with a system of seven rotating warnings to appear on "substantially the same number of brands" at any given time.

There is also no reason to believe these multiple warnings would increase public awareness of smoking and health issues. There are persuasive arguments that such a system is not working in Sweden, upon whose system this proposal is based. In fact, according to the Swedish Government, cigarette consumption has risen there annually since the new system was implemented in 1977.

The bill's requirement of disclosure of "tar," nicotine and carbon monoxide levels on packages and in advertising is unwarranted.

"Tar" and nicotine levels have been readily available to smokers in every cigarette advertisement since 1970. With respect to carbon monoxide, expert scientific testimony today will show that carbon monoxide exposure through cigarette smoke is not a significant health issue.

Furthermore, there is no generally accepted method of carbon monoxide measurement, which would make any data presented on packages and in advertisements subject to question.

The recently added provision requiring listing on cigarette packages of ingredients is totally unnecessary and ill-conceived.

Cigarette manufacturers use a variety of ingredients to enhance flavor and appearance and preserve shelf life. These ingredients are among each manufacturer's most closely held trade secrets. There is no justification for denying cigarette manufacturers the trade secret protection extended to every other consumer product industry.

You should also consider that as this provision is drafted, the list of ingredients, combined with the proposed health warnings and tar, nicotine and carbon monoxide numbers, would turn cigarette packages into little textbooks, likely causing smokers to ignore it all.

With regard to the labeling requirements for exported cigarettes, I will only say that the result would be confusion, chaos, and competitive disadvantage for American products in many overseas markets. (Attachment A.) [See p. 385.]

Turning to the enforcement provisions, I can only conclude that the underlying rationale for these proposals is to make it legally hazardous for cigarette manufacturers to advertise their lawful products.

The tenfold increase in the fine for violation of the labeling act, combined with the complexity of the labeling requirements of this bill, is grossly unfair as inadvertent violations are almost a certainty. Furthermore, the provision for an entirely new civil injunctive action by anyone wishing to claim the law has been violated is an unwarranted delegation of the Government's enforcement powers to private individuals. These provisions are inconsistent with efforts by the courts and Congress to limit Federal jurisdiction and ease the overburdening of Federal courts.

Finally, we do not believe that unbiased scientific research and dissemination of factual information regarding smoking issues requires the establishment of a statutory office of smoking and health, an antismoking organization within the Federal Government.

Since such an organization was created in 1964, its work has done little to resolve the smoking issue questions and has in fact been slanted toward dissemination of antismoking propaganda largely unsupported by factual evidence.

In conclusion, we are firmly opposed to this legislation because we believe it to be unnecessary, misleading, and, most importantly, because the medical and scientific assumptions or findings underlying it are incorrect and unsubstantiated.

I am sure that many people will ask why the tobacco industry is resisting this bill? What's the problem with putting a few new warnings on cigarette packages and advertising?

We are not opposing the bill because we wish to exploit the youth market as some have falsely charged; nor are we opposing the bill because of the potential costs of compliance. We oppose this bill because, despite the appearance of good intentions, this is bad legislation for the American public and for our industry.

This bill freezes science in its tracks and may divert scientific talent and resources from the basic research necessary to resolve those questions. It also seriously erodes the principle of free choice in a democratic society. In denying a person's right to reject official information, this bill betrays its fundamental prohibitionist motives. It says, in effect, that Americans are expressing their basic freedom of choice in rejecting the arguments of antismoking activists, and that Government finds this unacceptable.

Therefore, steps must be taken to make Americans conform and to encourage prohibition of smoking. I do not believe the American people will accept such a rationale.

We are a responsible and concerned industry. Manufacturing a lawful product which provides pleasure and satisfaction to 53 million Americans. Our industry contributes more than $57 billion annually to the gross national product and generates $22 billion in Federal, State, and local taxes of all kinds.

We view this proposed legislation as an unwarranted intervention by the Federal Government into the private lives of its citizens and a thinly veiled effort to further harass and ultimately eliminate an important American industry.

[Testimony resumes on p. 390.]

[Mr. Horrigan's prepared statement and attachment follow:]

Statement of Edward A. Horrigan, Jr. on H.R. 5653 Before The Subcommittee on Health and The Environment of The Committee on Energy and Commerce

My name is Edward A. Horrigan, Jr.. I am Chairman and Chief Executive Officer, R.J. Reynolds Tobacco Company.

I am also the Chairman of the Executive Committee of the Tobacco Institute, an association of tobacco manufacturers with headquarters in Washington, D.C.

With me today are Horace R. Kornegay, Chairman of the Tobacco Institute; Dr. Larry Light, Executive Vice President, Ted Bates, Inc.; and Samuel B. Witt, III, Vice President, General Counsel and Secretary of R.J. Reynolds Tobacco Company.

We are here at your invitation to express our Industry's position on H.R. 5653, the "Comprehensive Smoking Prevention Education Act of 1981."

The purpose of the bill, and I quote, is to "establish a national program under an Office of Smoking and Health to inform the public of the dangers from smoking, to change the label requirements for cigarettes, and for other purposes."

I respectfully submit that this bill is unnecessary because, in fact, virtually everyone is aware of the claimed dangers of smoking. The bill also represents a waste of taxpayers' money because it would require the establishment of a bureaucracy that will serve no useful purpose.

A 1981 Gallup survey, reported by Secretary Schweiker to a large assembly of voluntary health organizations in November of that year, found that "Ninety percent of the population agrees that cigarette smoking is harmful."

In his 1979 report, the U.S. Surgeon General said that "notable changes" had taken place in public awareness of claimed smoking hazards and expressed doubt that a higher level of awareness could have any effect on smoking behavior. We share this skepticism.

Indeed, the level of awareness about smoking and health far exceeds public awareness of most if not all of the major contemporary issues facing this nation.

Let me provide some examples: A 1980 Gallup poll revealed that less than 25 percent of the public knows what the First Amendment is or what it deals with. Other recent national surveys reveal that nearly 25 percent do not know what happened at Three Mile Island; 36 percent are not aware that the United States must import oil to meet its energy needs; 45 percent do not know that automobiles are the major source of air pollution; and one third do not know whether the Federal budget is balanced.

By contrast, at least 90 percent of the public is aware of the allegations that smoking is dangerous to health. This level of awareness demonstrates the success of the current Congressionally-mandated warning statement, as well as the efforts of public and private organizations.

The Federal Cigarette Labeling and Advertising Act is working. The facts clearly show that the public has been made aware of the so-called health hazards of smoking, and that people are in a position to make a free and informed choice on whether or not to smoke.

Given this fact, why substitute a novel and unproven system for the present law? There is no need to establish yet another government agency to administer yet another bureaucratic web of regulations targeted at an industry which manufactures and markets a legal product.

I submit that this bill will have little if any impact upon the remaining few Americans who may be unaware of claims made against smoking following almost three decades of government and private warnings, the Surgeon General's statements on cigarette packages and advertising, and broad dissemination of anti-tobacco propaganda through the public media.

In reality, this bill is a punitive measure directed against the manufacturers of a lawful product and appears designed to lead toward the prohibition of smoking. The fact that millions of people choose to continue to smoke, despite the almost universal awareness of the allegations regarding smoking and health, is frustrating to anti-smoking activists and advocates. And it is our belief that this frustration has led them to conclude that those who reject anti-smoking arguments and continue to exercise their freedom of choice are uninformed. Therefore, they seek measures, such as this bill, designed to force smokers to conform, and ultimately to result in the prohibition of smoking.

Let me take a few minutes to review some of the premises used to support this bill and the charges leveled at the Tobacco Industry.

A number of very broad, sweeping statements relating to smoking, disease and addiction are included in the particulars of the bill. Certainly the statement that smoking is addictive is contradicted by the 1964 Surgeon General's Report and the conclusions reached by many experts since 1964. Of course, there are questions raised by statistical associations relating to smoking and disease which must be answered. But the truth is that all of the statements that are presented as established fact in this bill have been challenged by the research findings of many eminent scientists, some of whom you will hear from later in today's proceedings.

There are more than thirty highly respected and knowledgeable witnesses with expertise in the relevant medical and scientific disciplines who we understand would have been willing to testify about the broad range of the so-called "findings" listed in Section 2 of the bill. Only the shortage of time for these hearings prevented their testimony. Given the opportunity, they would clearly have been able to distinguish hypothesis and speculation from objective medical and scientific fact, and would have raised serious questions concerning these "findings."

We respectfully submit that the time has come for this Committee and the Congress to be fully and fairly informed about the smoking and health controversy. We have been advised, however, that all the testimony in opposition to this bill must be limited to one day. Unfortunately this is far short of the time required adequately to inform the Committee. We will, nevertheless, do our best within the limited time made available to us.

In 1969, when the Federal Cigarette Labeling and Advertising Act was amended, the full Committee of which your Subcommittee is a part held extensive hearings over a period in excess of two weeks. It heard testimony from Members of Congress, state officials, government health and regulatory agency officials, voluntary health organizations, and numerous expert witnesses in the fields of medicine, biomedical research, statistics, and other scientific disciplines.

On the basis of these extensive hearings, the full Committee concluded that "nothing new has been determined with respect to the relationship between cigarette smoking and human health since its hearings in 1964 and 1965."

The Committee went on to say that "the arguments pro and con with respect to cigarettes are the same now as then, though supported by a larger statistical base." That conclusion is as true today as it was in 1969.

After three decades of investigation and millions of dollars invested by the government, the Tobacco Industry and other private organizations, the smoking and health controversy remains unresolved. The net result of all of this effort has been that no causal link between smoking and disease has been established. That is not merely the opinion of Tobacco Industry executives. That is scientific fact readily available to anyone willing to make an objective, unemotional study of the existing evidence.

Yet consider the language of some of the warning labels proposed in this bill. "Cigarette smoking is the number one cause," "is a major cause," "will injure." What credibility can such statements have in view of the millions of people who have smoked throughout their lifetimes and not incurred any of the ailments mentioned, and the millions who have never smoked and who have incurred these ailments?

I should add that the Tobacco Industry is recognized as a leader in seeking the answers to the questions regarding smoking and health. In the past three decades, the industry has committed, without fanfare, over 100 million dollars for unrestricted, independent research into smoking and health issues. Our spending has been greater than the tobacco-related research expenditures of all of the voluntary health agencies combined.

I submit that one of the effects of the bill would be to do significant harm to the scientific effort to resolve these questions. As worded, the bill purports to settle by Congressional edict medical and scientific controversies that are still evolving. Therefore, it may divert scientific talent and resources from the basic research necessary to solve the enigmas of chronic disease.

We are aware that there have been some efforts to build support for this bill with claims that its provisions would serve as a deterrent to smoking among young people and that Industry advertising and promotional practices are intended to encourage youthful smoking.

Such charges are without foundation.

Last Friday, two witnesses speaking in support of this bill -- Mr. Keeshan and Mr. Forsyth -- both acknowledged that peer pressure and not our advertising provides the impetus for smoking among young people.

You will hear more about this point this afternoon from the experts who will be presenting their testimony. They will clearly point out that the provisions of this legislation can in no way be justified by the emotionally appealing but unsupported assertion that cigarette advertising encourages a youngster to smoke.

Smoking is an adult practice to be considered only by those mature enough to make an informed decision.

In 1963, for example, cigarette companies stopped all advertising and promotional activities in school and college publications and on campus. We also stopped using celebrities and sports figures in advertising.

In 1964, we adopted a cigarette advertising code prohibiting advertising, marketing and sampling directed at young people. Even though the administrative provisions are no longer in effect, each company still adheres to the principles of this code. I would, with your permission, like to submit a summary of these principles and a copy of our Cigarette Sampling Code for the record.

In 1969, we offered to cancel all radio and television advertising because of broadcast's unique reach to young people, and in 1971, pursuant to Federal legislation, left the broadcast media.

Our advertising is targeted at smokers and is intended to encourage switching from competitive brands. The available evidence clearly shows that our advertising is not designed to attract new smokers of any age and is not having that effect. The same Gallup poll I mentioned earlier also reported that the percentage of smokers found was the lowest ever recorded by that organization.

Looking at the broader picture regarding cigarette advertising, the record clearly shows that our Industry has been responsible in its practices.

o In 1954, to meet public demand, we began to advertise low "tar" and nicotine cigarettes.

o In 1960, after the FTC stated that it had determined that such advertising could be construed as a health claim, we voluntarily agreed to eliminate from cigarette advertising all references to "tar" and nicotine.

o In 1966, when the FTC reversed its position we agreed that cigarette advertising would disclose "tar" and nicotine content.

o In 1967, we began a continuing program of scientific and technical cooperation with the FTC, with respect to "tar" and nicotine testing.

o In 1970, we began to include in our brand advertising, the FTC "tar" and nicotine measurements.

o In 1971, we volunteered to depict the cigarette package in all advertising in such a way as to display legibly the warning label.

o In 1972, we entered into an agreement with the FTC on uniform terms of conspicuously displaying the warning label in advertising.

o In 1981, we reached an agreement with the FTC on an increase in the size of the warnings.

In short, our Industry has acted responsibly in the past and we see no reason anyone should feel that we will not continue to do so in the future. Nor do we see why this bill is needed to regulate further our advertising practices in any way.

Getting back to the specific provisions of the bill, the labeling requirements it proposes are unworkable.

The bill directs the FTC to establish a rotational warning procedure which can at best be described as a "Rube Goldberg" contraption. Every brand of cigarettes would have to carry each of the seven required warnings for no more than one year during every seven-year period. Then there is the added provison that at any given time each of the seven warnings must appear on "substantially the same number of brands."

Mr. Chairman, in December 1981, the FTC reported "tar" and nicotine data on 200 cigarette brand styles. New brands are frequently introduced and old ones withdrawn. It is highly unlikely that the FTC or any other agency will be able to develop anything but a purely arbitrary formula for rotating the warning statements among the various brands.

Even if a rational formula could be devised, how could we make sure that each warning statement is presented to the public an equal number of times? Sales volume and advertising for each brand vary greatly. Equalizing warning statements among all brands will have no relationship at all to the number of times that each statement is exposed to the public.

Technical complexities aside, there is no reason whatsoever to believe that the proposed rotational warnings would be any more effective in increasing public awareness than the present statement. The proposal is based on a recommendation of the FTC Staff, which in turn was based on some undisclosed preliminary research regarding a rotational warning system used in Sweden.

The FTC Staff admits that the "effectiveness" of Sweden's system cannot be measured, and Mr. Waterson last Friday, March 5, presented persuasive testimony to the effect that this system is not working to reduce consumption in Sweden. While the FTC Staff concedes that the "effectiveness" of the Swedish system cannot be evaluated, the fact is, that according to the Swedish Government, cigarette consumption has risen each year since the new system was implemented in 1977. I also call your attention to the fact that the rotational warning system in Sweden was part of a total program designed to abolish smoking; which is the ultimate goal -- despite denials -- of many of the anti-smoking organizations which support this bill.

In light of these facts, and your statement that the purpose of this legislation is not to prohibit smoking, the obvious question arises: Is the proposed rotational system necessary or appropriate? We are convinced that the answer is that it is neither.

Also unwarranted, in our opinion, is the bill's requirement for disclosure of "tar," nicotine, and carbon monoxide levels on packages and in all advertising.

As indicated earlier, since 1970 cigarette manufacturers have voluntarily disclosed the "tar" and nicotine levels in cigarette advertising. This information is widely available to the public. Smokers who choose their brand on the basis of "tar" and nicotine levels can readily obtain this information from cigarette advertising.

As a matter of fact, the average "tar" yield of cigarettes sold in this country has dropped from 38 milligrams in 1956 to 12.6 milligrams in 1981. Almost seventy percent of all cigarettes sold are in the low "tar" category.

With respect to carbon monoxide, there is no purpose to be gained by the determination or publication of yields. As the scientific record will show, the conclusion that exposure to carbon monoxide from cigarette smoking is significant in terms of health is unwarranted. Furthermore, no single method of carbon monoxide measurement in cigarette smoke has gained general acceptance in the scientific community. Therefore, any data presented, by any method, will be subject to question. These issues should be resolved in the scientific community. We firmly believe that a required disclosure of carbon monoxide yields is ill conceived.

Just last week a new provision was introduced that would require each package to list "any chemical substance" that may become a component or otherwise affect the characteristics of cigarettes. It is worded so ambiguously that manufacturers could not determine what substances they were required to disclose.

Any attempt to use this labeling requirement for cigarettes will simply be unworkable. The net effect of this provision and the related provisions of section 4 would be to turn cigarette packages into little textbooks. Consider what the bill would require on every package -- a warning statement, a listing of "tar," nicotine, carbon monoxide, and "chemical substances." It seems likely that consumers, confronted with such a welter of detailed information, will simply ignore all of it.

This provision would also require cigarette manufacturers to disclose trade secrets that manufacturers of other consumer products are not required to disclose. Cigarette manufacturers use a variety of substances in their products to enhance flavor and appearance and to preserve shelf life. The identity of additives used by each manufacturer is among the most closely guarded of their trade secrets, for such ingredients play a substantial role in maintaining consumer acceptance.

Manufacturers of other consumer products are not required to disclose trade secrets of this kind. There is no justification for denying cigarette manufacturers the trade secret protection that is available to every other consumer product industry.

The basic defect in this provision, and indeed in all of section 4, is that it is an attempt to provide a quick and easy "solution" to a problem that has not yet even been adequately defined.

We have been and continue to be engaged in constructive and fruitful discussions with Assistant Secretary Brandt and other HHS officials on this matter with a view to making available necessary information to HHS under appropriate procedures and safeguards. Secretary Brandt has recently stated that he is "pleased with" our "cooperative spirit" and that he is "confident that substantial future progress can be made" in resolving this question. The present bill would short-circuit this effort to resolve any legitimate concerns. In other words, the effect of the bill is to "shoot first and ask questions later."

The bill also proposes to extend the labeling requirements to exported cigarettes. The present law wisely leaves package labeling to the government of each importing country. Many countries require statements regarding smoking and health to be included in cigarette packages and advertising. Many do not.

France, for example, requires a single warning, "Abuse is dangerous." Iceland had a compulsory warning but abandoned it. In the United Kingdom, cigarette packages carry three warnings. Sweden is unique in requiring a smorgasbord of sixteen warnings.

This bill would require American exports to carry a U.S. warning statement, while competitive brands in many foreign markets would carry none. In countries which require their own warning label, U.S. cigarettes would have to carry two or more warning statements. In some countries the sale of cigarettes bearing any warning statement other than that required by local law may be prohibited. In any event, the result would be chaos, confusion, and competitive disadvantage.

With all due respect, it would be presumptuous of the United States to decide for the rest of the world what statements should be included on cigarette packages.

I would now like to address the proposed amendments to the enforcement provisions of the present law. Mr. Chairman, I am forced to conclude that the underlying rationale is simply to make it legally hazardous for cigarette manufacturers to advertise their lawful products.

The bill would increase the fine for violation of the Act from $10,000 to $100,000. In the seventeen years the present law has been in effect, there have been no violations. That fact alone argues against any increase at all in the penalty -- much less a tenfold increase.

Furthermore, in view of the complexity of the new proposal, the increase is also grossly unfair. Inadvertent violations of the complex rotational warning system, which is likely to be further complicated by FTC requirements, are almost a certainty.

Suppose, for example, that it is determined that one manufacturer had printed warning statement "B" on the packages of two of its brands for a total of one year and one month, while warning statement "D" was printed on the packages of those brands for only eleven months. That manufacturer would be in violation of the prohibition against presentation of any one of the warning statements for more than one year in a seven-year period; it would also be in violation of the requirement that all statements be given equal time. Even though the effect of these violations would appear to be at most trivial, the manufacturer would be subject to huge potential penalties. A law that permits such mousetrapping can only be called inequitable and punitive in intent.

In addition, an even greater opportunity for abuse is created by the provision that establishes an entirely new civil injunctive action for anyone who wishes to claim that the law has been violated. This provision is an unwarranted delegation of the government's enforcement powers to private individuals. It is not only defective from legal and policy standpoints, it is legislative mischief-making at its worst.

I've been advised that just this January, the Supreme Court confirmed that the Constitution requires that a party invoking the jurisdiction of the Federal courts must show that it has personally suffered actual or threatened injury as a result of the challenged conduct. The Court condemned the widespread use of the Federal courts by individuals and groups to challenge actions to which they are philosophically or politically opposed. It seems clear, then, that the civil action provisions of this bill would not pass muster under this Constitutional requirement.

Congress has recognized that the Federal courts are seriously overburdened, and has begun to take steps to limit Federal jurisdiction; yet, here is a proposal that would open those courts to unlimited litigation over the arcane details of the bill's rotational warning system.

These civil action provisions seem calculated to encourage harassment suits against cigarette manufacturers by individuals and groups opposed to smoking in general. The vague and ambiguous requirements of the proposed rotational warning system will provide an open invitation to litigate disputes over what constitutes proper compliance. With the incentive of awards of costs and attorneys' fees provided by the bill, lawsuits alleging the most trivial violations of the law will be encouraged. Surely that is neither a fair nor appropriate use of our judicial system.

We must also register our vigorous opposition to the bill's elimination of the six-month Congressional review period with respect to trade regulation rule-making proposals.

In enacting the Federal Cigarette Labeling and Advertising Act, Congress sought "to establish a comprehensive federal program to deal with cigarette labeling and advertising." The legislative history and language of the Act and its subsequent amendments make it abundantly clear that Congress determined that such a comprehensive uniform policy should be legislatively formulated and articulated. Elimination of Congressional overview of the FTC on an issue of such national impact would be inconsistent with this sound policy.

Let me now turn to Section 3(a) of the bill, which would establish a statutory Office of Smoking and Health. As I stated earlier, this Industry has always favored objective scientific research and the dissemination of factual health information to the public. However, we do not believe that these goals call for an anti-smoking organization within the Federal government. When such an organization was created in 1964, the Senate Appropriations Committee questioned whether the funds might be better spent on research rather than propaganda. A Public Health Service official assured the Committee that "the money would not be used to propagandize, but only to make the health facts available to the people."

Has that pledge been carried out? Let me provide one example which is not atypical. Last year, the Office of Smoking and Health produced a $68,000 publicity campaign. It was built around four television commercials featuring Brooke Shields. The theme was that smoking is unglamorous. Or as the teenage starlet put it in one short message: "If there's anything I hate, it's washing my hair and then being with people who smoke. Yecch." Hardly a message of health facts, you will agree.

Of course, the Office of Smoking and Health produces more than advertising campaigns. It also publishes annual reports which are supposed to provide Congress with current information about the health consequences of smoking.

The timing of the reports, however, bears virtually no relationship to the conduct of scientific research or the publication of results. Studies take years to complete. Even on completion, their findings are tentative and subject to verification by other studies. The evidence simply cannot be packaged to meet a scheduled annual report. As a result, the reports to Congress have been used as media events high in propaganda content and low in scientific substance.

Additionally, bureaucratic pressure to show "progress" results in escalating the rhetorical style of these reports to overcome their scientific shortcomings. Rather than presenting a balanced view of all available information on the complex questions under study, the reports consistently have omitted any reference to scientific research which does not hew to the "official" line. Similarly, when further research demonstrates results which are inconsistent with previous findings, these developments are rarely noted.

For example, for many years a highly controversial experiment involving inhalation of cigarette smoke by dogs -- under very artificial conditions -- was cited as proof of lung cancer causation. The Government spent millions of dollars repeating that experiment in an effort to duplicate the reported results but cancelled these experiments -- which ran longer than the initial experiment -- when it became apparent that the dogs did not develop cancer.

The Surgeon General's recently issued report, however, fails to mention the cancellation of these experiments and the fact that the initial results could not be replicated and therefore were not reliable. The bias inherent in such omissions is inconsistent with sound scientific practice and the goal of informing the public.

Testimony has previously been given to Congress by several respected researchers concerning the repetitive and misleading nature of the Surgeon General's annual reports.

We question whether Congress should reward the Office of Smoking and Health with the status conferred upon it by this bill.

We question whether the prosecutional arm of the anti-smoking movement should be invested with authority to coordinate and thereby control the scientific research activities of other government agencies. This bill would subject even the National Institutes of Health to such "coordination". Just how the decision-making processes and peer review systems of the NIH would be "coordinated" is unclear. The potential for mischief is, however, obvious.

In conclusion, we are firmly opposed to this legislation because we believe it to be unnecessary, misleading and, most importantly, because the medical and scientific assumptions or "findings" underlying it are incorrect and unsubstantiated.

I am sure that many people, after scanning the headlines or listening to the evening news, will ask: Why is the Tobacco Industry resisting this bill? What's the problem with putting a few new warnings on cigarette packages and advertising?

We are not opposing the bill because we wish to exploit the youth market as some have falsely charged; nor are we opposing the bill because of the potential costs of complying with its requirements.

We oppose this bill because, despite the appearance of good intentions, this is bad legislation -- not only for our Industry but the American public as well.

This bill freezes science in its tracks. It purports to settle by Congressional edict medical and scientific controversies that are still evolving, and thereby it may divert scientific talent and resouces from the basic research necessary to solve the enigmas of chronic disease.

This bill also seriously erodes the principle of free choice in a democratic society. It says, in effect, that if you don't conform, you are uninformed, and that the Government must take corrective action. In denying a person's right to reject "official" information, the bill betrays its fundamental prohibitionist motives. The proponents of the bill object to the fact that Americans are expressing their basic freedom of choice in rejecting the arguments of anti-smoking activists; they find this independence unacceptable, and therefore, propose steps intended ultimately to result in the prohibition of smoking.

We are a responsible and concerned industry, manufacturing a lawful product which provides pleasure and satisfaction to millions. Our Industry contributes more than fifty-seven billion dollars annually to the Gross National Product and generates twenty-two billion dollars in Federal, state and local taxes of all kinds.

This proposed legislation is an unwarranted intervention by the Federal government into the private lives of its citizens, and a thinly veiled effort further to harass and ultimately eliminate an important American Industry.

Principles Governing

Cigarette Advertising and Sampling

These advertising principles apply to all forms of advertising including vehicle decals, posters, pamphlets, matchbook covers, and point of purchase materials in the United States, Puerto Rico, and U.S. territorial possessions.

1. No advertising shall appear in publications directed primarily to those under 21 years of age, including school, college or university media (such as athletic, theatrical or other programs), comic books or comic supplements.

2. No one depicted in cigarette advertising shall be or appear to be under 25 years of age.

3. Cigarette advertising shall not suggest that smoking is essential to social prominence, distinction, success or sexual attraction, nor shall it picture a person smoking in an exaggerated manner.

4. Cigarette advertising may picture attractive, healthy looking persons provided there is no suggestion their attractiveness and good health is due to cigarette smoking.

5. Cigarette advertising shall not depict as a smoker anyone who is or has been well known as an athlete, nor shall it show any smoker participating in, or obviously just having participated in, a physical activity requiring stamina or athletic conditioning beyond that of normal recreation.

6. No sports or celebrity testimonials shall be used or those of others who would have special appeal to persons under 21 years of age.

7. Persons who engage in sampling shall refuse to give a sample to any person whom they know to be under 21 years of age or who, without reasonable identification to the contrary, appears to be less than 21 years of age.

8. Sampling shall not be conducted in any public place within two blocks of any centers of youth activities, such as playgrounds, schools, college campuses, or fraternity or sorority houses.

9. Persons who engage in sampling shall not urge any adult 21 years of age or over to accept a sample if the adult declines or refuses to accept such sample.

Code of Cigarette Sampling Practices

STATEMENT OF PURPOSE

Cigarette sampling is a form of cigarette advertising conducted through the free distribution of sample packages of cigarettes directly to adult smokers. The purpose of this Code is to ensure that certain standards are observed in connection with cigarette sampling, particularly avoiding the distribution of cigarettes to minors and the disruption of pedestrian or vehicular traffic, and to provide a means whereby compliance with those standards can be monitored and enforced.

ARTICLE I

DEFINITIONS

1. "Sampling" means giving or distributing without charge packages of cigarettes in a public place for commercial advertising purposes ("cigarette samples"), but does not include isolated offerings of complimentary packages or the distribution of such packages to wholesale or retail customers or to company shareholders or employees in the normal course of business.

2. "Public place" includes any street, sidewalk, park, plaza, public mall, and the public areas of shopping centers and office buildings.

ARTICLE II

RESTRICTIONS ON CIGARETTE SAMPLING

1. Persons who engage in sampling shall refuse to give a sample to any person whom they know to be under 21 years of age or who, without reasonable identification to the contrary, appears to be less than 21 years of age.

2. Sampling shall not be conducted in any public place within two blocks of any centers of youth activities, such as playgrounds, schools, college campuses, or fraternity or sorority houses.

3. The mails shall not be used to distribute unsolicited cigarette samples.

4. Persons who engage in sampling shall not urge any adult 21 years of age or over to accept a sample if the adult declines or refuses to accept such sample.

5. No cigarette samples shall be distributed by a sampler in a public place to any person in a vehicle.

6. Persons distributing cigarette samples shall secure their stocks of samples in safe locations to avoid inadvertent distribution of samples contrary to the provisions of this Article.

7. Persons distributing cigarette samples shall avoid blocking or otherwise significantly impairing the flow of pedestrian traffic.

8. In the event that circumstances arise at a particular location that make it unlikely that sampling can be conducted in a manner consistent with the provisions of this Article, sampling shall be stopped at that location until such circumstances abate.

9. Persons distributing samples shall promptly dispose of empty sample boxes and shall take reasonable steps to ensure that no litter remains in the immediate area of sampling as a result of sampling activities.

ARTICLE III

COMPLIANCE AND ENFORCEMENT PROVISIONS

1. Each cigarette manufacturer that subscribes to this Code shall impose by contract on all independent contractors who conduct cigarette sampling on the manufacturer's behalf a set of sampling standards no less stringent than those contained in this Code. In addition, each cigarette manufacturer shall require such sampling contractors to inform all personnel employed by the contractor who engage in sampling activities of the provisions of this Code, both orally and in writing.

2. Persons who engage in sampling shall be monitored on a periodic basis by supervisory personnel of the cigarette manufacturer and/or independent contractor for whom the sampling activities are being conducted to ensure compliance with the provisions of this Code.

3. Each cigarette manufacturer that subscribes to this Code shall take all reasonable steps to ensure that any person who engages in sampling and knowingly violates any of the provisions of Article II of this Code shall be discharged from employment as a cigarette sampler.

Attachment A

SUMMARY OF PROBLEMS
PRESENTED BY EXPORT PROVISIONS
OF H.R. 5653

1. Principal Language Problem. Section 4 (b)(5) requires that the label statements on packages of cigarettes for export from the U.S. "be printed in the principal language of the country to which the cigarettes are exported."

(a) Several countries and colonies are multilingual, e.g. Belgium, Finland, Switzerland, Canada, Cyprus, Hong Kong, etc. What would be the "principal" language?

(b) Some cigarettes exported from the U.S. are warehoused after manufacturing and the ultimate foreign destination is not known. For example, one major U.S. cigarette manufacturer warehouses exported cigarettes in Antwerp in bond for distribution to several European countries and duty free shops. At the time of manufacture the ultimate destination and "principal" language is not known.

(c) Section 4 (b)(5) is ambiguous as to whether the requirement is for the principal language of the country of first export or the country of ultimate use.

2. Rotating Warnings Problem. Section 4 (a)(1) of the bill requires rotating label warnings for cigarette exports.

(a) The present law wisely leaves package labeling to the government of each importing country. Many countries require statements regarding smoking and health to be included in cigarette packages and advertising. Many do not.

France, for example, requires a single warning, "Abuse is Dangerous." Iceland had a compulsory warning but abandoned it. In the United Kingdom cigarette packages carry three rotating warnings. Sweden is unique in requiring a smorgasbord of sixteen rotating warnings.

H.R. 5653 would require American exports to carry U.S. warning statements, while competitive brands in many foreign markets would carry none. In some countries the sale of cigarettes bearing any warning statement other than that required by local law may be prohibited. In any event, the result will be chaos, confusion, and competitive disadvantage.

(b) Section 4 (a)(1)(A) requires a warning that the consumer write to the Surgeon General in Washington, D. C. for more information on "Specific Dangers of

Cigarette Smoking". This requirement is useless and ill conceived in its application to exports. It's hard to imagine someone from Saudi Arabia writing the U.S. Surgeon General. Would the U.S. Surgeon General respond in Arabic?

(c) Some foreign laws require label warnings to be in two or even three languages. For example, Canada requires warnings in French and English; Belgium warnings are in French, German and Dutch. Since the warnings required by Canada and Belgium are different than any of the warnings under H.R. 5653, the Canadian package may be required to have two warnings in French and two in English and the Belgium package may be required to have six different warnings.

3. Tar, Nicotine and Carbon Monoxide. Section 4 (c) requires diclosure of the level of tar, nicotine and carbon monoxide on the pack.

(a) H.R. 5653 requires that the level of tar, nicotine and carbon monoxide be based on the levels established annually by the Federal Trade Commission. The laws of several foreign countries (e.g. Germany, Canada, United Kingdom, Egypt and Australia) require testing methods which may result in tar and nicotine levels different than the levels obtained from the

Federal Trade Commission method. Discrepancies between the FTC method and the methods required under the foreign laws would confuse consumers and may expose U.S. manufacturers to fines and prohibition of sale of their products in these countries.

(b) The system in some countries does not permit disclosure of tar, nicotine and carbon monoxide numbers on the label. For example, the United Kingdom divides tar levels into five groups and the label can only show the tar group and not the number. Some countries have other systems or regulations regarding disclosure of tar and nicotine and carbon monoxide which conflict with the requirements of H.R. 5653.

4. Congressional Purpose. Section 2 of the Cigarette Labeling and Advertising Act (15 USC 1331) is not amended by H.R. 5653. That Section states that one purpose of the Act was to not impede commerce by "diverse, nonuniform and confusing cigarette labeling and advertising regulations." The consumer confusion and conflicts with foreign law created by H.R. 5653 are contrary to that Congressional intent.

5. Sovereign Rights. H.R. 5653 would interfere with the sovereign rights and interests of foreign nations.

Before acting to regulate exports in the manner contemplated by H.R. 5653, Members of Congress and this Subcommittee should ask themselves how they would react if a foreign government were to impose on U.S. consumers regulations which are at variance with U.S. policy and law. There can be little doubt that there would be serious objection.

The question of warning labels on cigarette packages involves competing national interests and differences of perspective on individual and corporate rights and responsibilities. Each society has a right to strike what it considers to be the proper balance among these competing interests, and it is essentially irrelevant that other societies might reach different conclusions. It is an inherent right of sovereignty to make decisions such as these without outside interference.

6. Conflicts With U.S. Export Administration Act. H.R. 5653 would mark a major departure from U.S. law and policy in its attempt to regulate U.S. exports with respect to matters which have nothing to do with U.S. security, U.S. foreign policy or domestic shortages. Such a change in course should not be taken without thorough consideration by the Congress and the principal committees that have been involved in setting U.S. export policy for many years.

Mr. Waxman. Thank you very much, Mr. Horrigan, for making your position clear on this legislation.

It has been 18 years since the first Surgeon General's report indicating that cigarette smoking is a danger to people's health. Since that time we have had report after report, including the latest Surgeon General's report relating cigarette smoking to cancer. We have had leading scientific experts in this country, the National Cancer Institute, and the National Institute on Drug Abuse tell us that cigarette smoking is addictive and that it is a leading source of lung and heart disease.

In light of all that, how do you explain your unwillingness to even make a connection between cigarette smoking and these health problems?

Mr. Horrigan. Mr. Chairman, to begin with, we really do not believe that our industry is unwilling in any sense of the word. I mentioned in my testimony that we are a concerned and a responsive industry. That is supported by the fact that while the Surgeon General's report continues to publish new statistics, our tobacco industry continues to earmark millions of dollars annually on an ongoing basis in unrestricted, arm's-length research to answer the very questions raised in the Surgeon General's report.

One other point raised in your question with regard to cigarettes, with regard to addiction. There is absolutely no proof that cigarettes are addictive and that was referred to in an earlier Surgeon General's report.

Mr. Waxman. You are putting money into trying to prove or disprove an absolute scientific certainty. It's difficult to establish a scientific certainty. We have to make judgments based on the evidence. The most respected scientific experts in this country have made a conclusion based on what they see as much more than mere coincidence between cigarette smoking and dramatic increases in heart and lung disease.

How do you explain the strong correlation between those who smoke and those who seem to have the largest incidence of cancer and heart and lung disease.

Mr. Horrigan. There are obviously new statistical evidence and links between various sicknesses and cigarette smoking. I cannot agree with you that all of the scientific or medical community agrees with the interpretation of those findings.

This morning we have a panel of scientists who will present their views and I only wish that all of those scientists who wanted to participate this morning could have been here, because the scientific community is not unanimous in their judgments on this point.

Mr. Waxman. There seems to be a preponderance of opinion among the leading scientific experts in this country that are involved in public health and heading up the major governmental efforts to combat heart disease, lung disease and cancer. They have all come before us and said without any equivocation, without any doubt in their minds, that there is a clear link between cigarette smoking and these illnesses.

You are telling us that there is no link? Is that correct?

Mr. Horrigan. I am saying that science to date after much research including over $100 million funded by our industry, indicates that no causal link has been shown. That is what I am advised. I am not a scientist, Mr. Waxman. That is why doctors asked or scientists asked to participate here this morning, to perhaps answer in greater depth the questions that you raise.

We share your concern. That is obviously why we earmark the dollars that we do every year in research that builds more evidence, not statistics, but continues not to prove a causal link.

Mr. **Waxman**. You also earmarked a large number of dollars in order to promote cigarette smoking in this country, isn't that correct? You do spend money for advertising and other promotional efforts?

Mr. **Horrigan**. That's right. The free enterprise system, I think we have a lawful product and a right to compete in the marketplace for the smoking public.

Mr. **Waxman**. Could you give us the figure that you would annually spend on advertising and also give us the figure of how much you spend on scientific research as to the danger or potential danger of your product?

Mr. **Horrigan**. Yes, sir. First of all, I don't have the numbers, obviously precisely by company, but on behalf of the industry, I would say our estimates of industry advertising is in the range of $900 million. The industry earmarks in excess of $10 million a year in research. I don't think we should truthfully relate advertising dollars to research dollars, but rather take the research dollars spent by many other organizations, health organizations, or industries, and I believe that our numbers are recognized as underlying a far more significant commitment to this concern.

Mr. **Waxman**. You indicate you have been having what you call constructive and truthful discussions with Assistant Secretary Brandt and other Department of Health and Human Services' officials on this question of smoking. Then, you express your unhappiness with their support for this legislation. You claim, in other words, the effect of the bill is to shoot first and ask questions later.

Do you feel that the administration did not hear you out or understand the arguments that you had to make against the legislation that they are now supporting?

Mr. **Horrigan**. I believe Mr. Kornegay could answer that in greater depth. We believe we are having productive discussions with that agency regarding that particular issue. In that forum, we are getting a fair hearing. I do think with regard to the severity, the serious impact of this bill that our industry is not being given the proper time to air its views properly and provide you with our responsibility to keep you as well-informed to answer all of the questions possible. The time frame on this particular situation, we believe, is very tight indeed.

Mr. **Waxman**. You are spending money on trying to come up with a scientific certainty. Do you have any estimate from your scientific people as to a time when they will be able to tell us that cigarette smoking is or is not harmful?

Mr. **Horrigan**. I wish that I could, Mr. Chairman. I think like any pursuit, any medical or scientific pursuit of any known disease, I don't think anyone could have answered years ago whether they would have found the answer to polio vaccine. I don't think science can work to a timetable. The important thing is not to cut off medical research and scientific research, but to continue in search of the answers. But I really can't give a timetable.

Mr. **Waxman**. Have you been influenced in terms of your own personal view of the potential dangers of cigarettes from all of the evidence that has come about in the last 18 years?

Mr. **Horrigan**. I think my own personal experience might be somewhat unique and approriate here. I am not a so-called tobacco industry executive who has spent his life in this business. I just joined the tobacco industry 4 years ago. In looking at this industry, while the opportunity from a career standpoint was a good one, but because of the publicity surrounding this industry I obviously had to ask myself a lot of questions about it.

And I found out an awful lot about this industry that are little-known facts. I would never have taken a career position in this industry if I had any concerns about the product that I was responsible for marketing.

Mr. **Waxman**. You know, the product liability laws require manufacturers to warn about the dangers associated with a product. The Federal Cigarette Labeling and Advertising Act requires the current health warning displayed on cigarette packages. If we were to repeal that warning on cigarette packages or the warning required on advertising, what obligation do your lawyers tell you that you would have to advise the public about the potential dangers of smoking your product?

Mr. **Witt**. Mr. Chairman, I don't think the intention is to repeal the obligation to have a warning.

Mr. **Waxman**. We are obviously not trying to do that but it was one of the suggestions in opposition of this legislation that the Government should not be involved in this area. If we took you up on the premise that the Government should not be involved in trying to urge people not to smoke and struck from the law the requirement that there be a warning that cigarette smoking is dangerous to your health, you would then have a legal obligation to warn consumers if your product offered some danger to them.

What do your lawyers tell you you would have to advise the public if the Government didn't require you to display the current warning label?

Mr. **Witt**. That is a very complicated question. If you would allow me, sir, and if your staff would give us some direction as to precisely what sort of answer you prefer, I will consult with our lawyers and give you an appropriate answer. But in the environment we are acting under at the moment, I don't think it's appropriate for me to try to speculate, given the fact that there is a substantial amount of product liability litigation underway and given the fact that it is, as I said, a very complicated and somewhat difficult area to deal with ad hoc.

Mr. **Waxman**. Without objection from my colleagues, I will have the record held open so that we can get that information from you at a later date. [See p. 415.] But I would submit to you that to adequately warn the consumers under all of the product liability laws that I have seen from jurisdiction to jurisdiction throughout this country, you would have to give a lot more information and a significantly more detailed warning than what is now required under the law.

I would think it would come pretty close if not exceed in detail the warning labels we are calling for in this legislation. See if your lawyers agree with that conclusion.

Mr. **Waxman**. Let me now recognize some of my colleagues who have questions for Mr. Horrigan and members of the panel.

Mr. **Bliley**. Thank you, Mr. Chairman and thank you, members of the panel. I appreciate you coming here to bring some light on this subject. I have a few questions for Mr. Horrigan.

You mentioned a Gallup poll that found 90 percent of the population is aware of the health claims associated with cigarette smoking. Are you aware of any other evidence—polls, surveys, that show the extent of the public knowledge of this issue?

Mr. **Horrigan**. Yes, sir. There was a survey and a report or statement that goes way back to 1968 where a Government official said that you could go to a rooftop—I forgot the exact quote—and shout about the dangers of cigarette smoking and there would be nary a person that is not aware of the dangers of cigarette smoking.

Furthermore, with regard to polls, I think there was a poll back in 197[illegible] or 1980, a Gallup poll. The specific breakout with regard to teenagers found that 96 percent of teenagers believed that smoking was injurious to their health. You can tell by my accent I am a New Yorker, not from North Carolina. But we have an expresssion down there: "If it ain't broke, don't fix it." We think your Surgeon General's warning is working very effectively.

Mr. **Bliley**. Your people who advise you and do statistical research for you in behavioral matters—I know we will have some people later who are experts in this field testify—is it possible, in your opinion, through changing warning labels or through the language of this bill, to raise the percentage of awareness as a result?

Mr. **Horrigan**. In our judgment, we do not believe you could raise that level of awareness. If you take the business of marketing, a 90-percent awareness level for any brand message would be regarded as an extraordinary success. There is another phrase called "singlemindedness versus clutter." Advertisers worry about being on television and the clutter effect in losing their effectiveness.

But we believe genuinely that the singlemindedness of the Surgeon General's warning achieves that level of awareness, is accomplishing what truly is your intention here. I think that to add perhaps a more broader perspective to your question, I would like to ask Dr. Light to comment from his viewpoint on this particular question.

Dr. **Light**. Thank you. I don't have specific numbers on all advertising campaigns, but I must say, based on my personal experience and judgment, this particular message has achieved numbers that would be truly considered to be remarkable.

Some of this is not surprising. I don't believe there has been any single advertising message that has had the kinds of support that this one has had. There have been millions of impressions and millions of dollars spent.

It has appeared in all forms since 1971, it has appeared consistently in the same form since 1972. And the result of all of this is truly extraordinary awareness. When I talk about awareness, I don't mean that people memorize specific words.

People do not memorize advertising. What people do is they remember overall impressions. And all of the research that I have been able to review suggests that consumers have registered the intended net impression of the warning statement.

I also think that there are a couple of principles we ought to keep in mind, advertising principles. That is this whole issue of singlemindedness and consistency. In the advertising business, we have some principles of how to produce effective messages. There are five of them. Keep it simple; make it clear; say it often; be consistent; be singleminded.

The warning statement as currently structured, in my opinion, meets these guidelines.

So it is not only that we have had a lot of support for it over the years and a lot of impressions made, but frankly, you have followed the principles of good communication.

So, again, I am not surprised that we have these extraordinary high awareness levels. There is a saying that familiarity breeds contempt. A lot of advertising people seem to buy that because they call it wearout. The truth is that familiarity breeds trust, not contempt.

Consistency is what we are after in advertising, not variability. Variability breeds confusion. And, in my judgment, I think the rotational system that is proposed wouldn't help, it will hurt. Think of companies that when they built an awareness level of 60, 70, and 80 percent, how careful they are to make a change.

They don't want to abandon some asset they have built over the years because they recognize any change will lower awareness, not increase it. So, frankly, I see no benefit at all to this rotational strategy.

My hypothesis is that it would probably hurt rather than help.

Mr. **Bliley**. In your testimony, Mr. Horrigan, you referred to Sweden. You pointed out, I believe, that cigarette consumption, that is the number of cigarettes sold in Sweden, is not down. But the chairman of the subcommittee introduced into the record yesterday an article published by the Swedish Institute called Current Sweden, dealing with this subject.

It was dated November 1981. I don't know if you have seen it or not.

Mr. **Horrigan**. I have not, sir.

Mr. **Bliley**. It was interesting to note that they agree with you on page 7 in here, it states that the total number of cigarettes sold in Sweden has not changed. Has the total number of cigarettes changed in Great Britain, that is, to your knowledge, as a result of or since the rotational warnings went on there?

Mr. **Horrigan**. The market in the United Kingdom, I believe, is either flat to slightly declining. I think it is a combination of reasons in that particular market, but I can't really say precisely what these numbers are.

Mr. **Bliley**. They couldn't say in that what they were, either. I believe the price of a pack of cigarettes in Sweden, with kronor value of 18 cents, would put it in the neigborhood of $2 a pack, which is considerably more expensive than it is in this country.

I thank you.

There have been several references in these hearings about the amount of money that cigarette manufacturers spend on advertising and a large increase in that spending after the industry ceased advertising on radio and TV.

I have been thinking about how the cost of everything else has gone up over the years. I wonder if anyone in the industry has ever compared what was spent to advertise cigarettes, say, 10 years ago, to what is being spent today?

Mr. **Horrigan.** I have, Mr. Bliley, on many occasions, because I have to justify our marketing budgets to my board of directors. So we come up with comparisons to show rates of advertising.

That question is often raised, for example, in a process such as this. To put that in perspective, if you go back to about 1968, there were some 168, I think, brands or brand styles in the market. You relate that to a marketing or total budget in those days or expenditure level in the range of some $300 million.

Give or take, it figures out to an average per brand in terms of marketing support of about $2.5 million per brand. Now, it doesn't work out necessarily that way because you weigh your advertising.

If you take the total dollars, that is how it came out. Since then, there has been a multiplicity of brands and brand styles introduced in the marketplace. Given the number of brands in the marketplace today, and taking my number that I quoted to the chairman earlier this morning of an excess of some $900 million, which in real dollars compared to that $300 million back in 1970 would be more like one-half billion dollars, then you are still talking about brand support on a per-brand basis of $2 to $2.5 million.

So your rate of intensity on a per-brand basis has not increased.

Mr. **Bliley.** Thank you. You also talked about the tobacco industry refraining from sampling to adolescents. How do you go about accomplishing this?

Mr. **Horrigan.** There is a cigarette code of sampling within the cigarette industry, which we all rigidly adhere to. We have written pamphlets with regard to the sampling laws, for example, we do not sample in or near or around college campuses or schools.

We have our own code here with regard to the distribution of samples, the need to verify a certain person's age before cigarette sample is distributed. I would tell you that our industry is so competitive that if, for any reason, as you move out and assign this responsibility to promotion firms or agencies, if there is any violation of this, at the local level, it is brought immediately to the attention of the company who has that particular problem.

It is stopped immediately. We very faithfully do this.

Last but not least, I think it follows a series of changes over the years, to continue to modify our practices to respect our Government's concern and our own concern about appealing to youth.

Mr. **Bliley.** You say that the tobacco industry sees no reason to include the warning label on cigarettes that are exported. But, what about cigarette exports to developing nations? Don't you think they should be warned of the controversy surrounding smoking and health?

Mr. **Horrigan.** First of all, smoking is a behavioral pattern exercised or expressed throughout the world. With regard to Third

World countries, there are certain requirements with regard to warnings and different governments have different requirements.

They are obviously honored by all cigarette manufacturers. The cigarettes that are marketed in those countries, meet the particular preferences of those countries. The trend toward lightness that we see in America is emerging on a worldwide basis, but it is not as mature yet in other countries of the world.

Mr. **Bliley**. Do you know approximately how much, Mr. Horrigan, it would cost the cigarette manufacturer annually to rotate warning labels. For example, how much would it cost R. J. Reynolds?

Mr. **Horrigan**. There is an estimate developed on an industry basis, but to be very honest, as I indicated in my testimony, our concern this morning is not one of economics. It is in the range of, I think, for the total industry a cost of some $40 million.

So it is not a question of lack of ability to do this, the economics of it are not, in our judgment, an issue.

Mr. **Bliley**. I see. But this $40 million could go into higher employee wages or some other factor, since it has not been shown, at least to this member, that by rotating labels, that it has had any effect on consumption.

And I think that in Government, the burden of proof is on us, if we are going to put a burden on somebody, to interfere with their rights to advertise, that we must show overwhelming evidence that it is going to be effective.

I thank you very much. I thank the indulgence of the Chair and my colleagues for allowing me this time.

Mr. **Waxman**. Thank you, Mr. Bliley.

Mr. Dannemeyer.

Mr. **Dannemeyer**. Thank you. I would like to ask the counsel, Mr. Witt, a question or two, if I may. Mr. Witt, have there been any juries any place in the country who have on appropriate instructions of the judge, brought in a verdict of liability against the seller of cigarettes on the allegation of a plaintiff in a lawsuit that the smoking of cigarettes impaired that plaintiff's health?

Mr. **Witt**. It is my understanding that there have been no verdicts brought in against the tobacco industry on that basis.

Mr. **Dannemeyer**. You mention that there are some cases pending around the country now. Are there some awaiting trial on this issue?

Mr. **Witt**. I can consult with my colleagues behind me and find a precise answer to that.

Mr. **Dannemeyer**. What I would like to do, when you consult with them, is ascertain if plaintiff's counsel have been successful in getting by a suit in a civil case to the point where the judge has submitted the case to a jury. If you have the answer to that, I would appreciate it?

Mr. **Witt**. If you would like, I will find the answer. I don't want to take the subcommittee's time to chat with my friends while other more important matters may be discussed. But I will find the answer and get it for you.

Mr. **Dannemeyer**. I would also like to know what instruction plaintiff's counsel are giving or requesting the judges give, to juries on the issue of approximate cause? That is the causal relation, epi-

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demiologically speaking, between the smoking of cigarettes and the onset of disease or debilitating disease to plaintiffs?

For instance, I would like to know, are judges including, in their jury instructions, the statement appearing on packages of cigarettes as it presently exists, when they instruct juries? Do you know that?

Mr. **Witt**. A broad answer, which we will be glad to expand upon if you wish, is that the instructions as you have put them have not gone to juries. In every case juries have found for the tobacco industry.

Mr. **Dannemeyer**. I see. Interesting. Thank you.

I would like to ask this: Are you in what I call the advertising business, Mr. Light?

Dr. **Light**. That is Dr. Light and that is what we call it.

Mr. **Dannemeyer**. I am glad to have the opportunity to meet one of the experts of your trade, sir. Because I, too, am a consumer in America. And I have an opportunity from time to time, I have children in my home, like most of us, I suppose, and they turn on the TV—to view your work product. When the TV is on, I sometimes hear these advertisements that you share with the American public, selling the products of your clients. Would you mind outlining those specific things that you say sell products to consumers of America again?

The first was what? Keep it simple.

Dr. **Light**. What I was outlining there were some principles of communication for building awareness.

Mr. **Dannemeyer**. Yes.

Dr. **Light**. Keep it simple, and I think that is, in my judgment, the most fundamental one of all, in fact, we have an expression that some of us use called KISS, k-i-s-s, it stands for "Keep It Simple, Stupid."

Mr. **Dannemeyer**. Yes. What is the next one?

Dr. **Light**. Make it clear.

Mr. **Dannemeyer**. All right, clear.

Dr. **Light**. The third is say it often.

Mr. **Dannemeyer**. Often, well, now, that is interesting.

Dr. **Light**. The fourth is be singleminded. And finally, be consistent.

Mr. **Dannemeyer**. And consistent. Well, I don't expect that my comments will change the tactics or assessment of the advertising industry one wit, sir, but one consumer to you, with all due respect, I think that the basic premise of the advertising industry of this country is insulting.

I find it offensive and demeaning to the intelligence of the American people. And for whatever it is worth, in my assessment of how I will spend my money, for those products who advertise their wares on the principle of often, where the theory is, I suppose, the more you beat people over the head, the more you are going to sell your products, it has the effect of consciously causing me to do deliberately the opposite.

Perhaps that is all a part of your scheme. You want to invariably reach the psyche of the consumer to cause that Pavlovian response somewhere along the line. To ultimately breakdown and buy your products. Perhaps I am, you know, susceptible as well.

But my friend, let me share with you, I am very sincere about it and I appreciate the opportunity of finding someone from your industry and sharing these thoughts with you for whatever it is worth.

There are various ads that appeal to this consumer. There is one at Christmastime, I wouldn't name the product, but it has a sleigh pulled by a horse going across a snow scene. I tell my wife whenever that comes out once a year, "You have to go down and buy some of that beer because that, to me, appeals to this consumer's intellect."

It is beautiful, it is a story and I suppose that the only time they come on is at Christmas. Whatever that is worth, take that back and share it with those executives on Madison Avenue as one consumer of America to you people running the airwaves of our Nation.

Thank you.

Dr. LIGHT. Thank you very much for the advice.

Mr. DANNEMEYER. It is worth what you paid for.

Mr. WAXMAN. I seem to be hearing what appears to be a contradiction in the testimony on at least one point. I understand, Mr. Horrigan, that you are claiming that these warning labels, this information that we are proposing to have available in cigarette advertising about the specific health dangers of cigarette smoking, would not be effective.

I hear Dr. Light saying that the cigarette warning label we already have is tremendously effective. Is that a contradiction?

Mr. HORRIGAN. I don't believe it is.

Mr. WAXMAN. Dr. Light, why don't I address that to you?

Dr. LIGHT. I think the key is your definition of effectiveness.

Mr. WAXMAN. Are you claiming that most people in this country are aware of the dangers of smoking because of these warning labels and the success of the warning labels is due to the fact that they are simple, clear, and singleminded?

Dr. LIGHT. That is correct.

Mr. WAXMAN. Now, you are saying they are effective?

Dr. LIGHT. Absolutely.

Mr. WAXMAN. I thought Mr. Horrigan claimed that we should not have this label changed because labels, per se, are not effective in informing people. That is the argument I have been hearing in the last couple hearings, that in Sweden and other places, warning labels are not an effective way to inform the public.

Mr. HORRIGAN. I can't say that, Mr. Chairman.

Mr. WAXMAN. You believe the warning labels are effective?

Mr. HORRIGAN. I said that, it is in my testimony, in my lengthier submission to your committee.

Mr. WAXMAN. If we want to inform the public that cigarette smoking is a major cause of heart disease, that cigarette smoking is the No. 1 cause of lung cancer, and that cigarette smoking by pregnant women may result in birth defects—while you might not agree with the message—wouldn't warning labels be an effective means to convey this information?

Mr. HORRIGAN. We don't believe it would be. Obviously, we are here this morning because we object to this legislation on several bases, not purely the method of communication. But on several bases.

Mr. **Waxman**. Your objection is to the substance of the warning?

Mr. **Horrigan**. Our objections are based upon the mechanics of it, the fact that it is unworkable——

Mr. **Waxman**. Why is it unworkable? You say that it is only a matter of economics——

Mr. **Horrigan** [continuing]. This bill, in its present form, has associated penalties along with certain requirements. And with the multiplicity of brands and brand styles and this methodology or rotating warnings, the cigarette industry is being exposed very badly from a litigation standpoint.

The mechanics of implementation, regardless of cost, are also burdensome. So those are just some——

Mr. **Waxman** [continuing]. I don't want to be unfair to anybody. It seems to me if that is the problem, it can be worked out. We can talk about how you can implement what we would consider to be a legitimate warning label because from our point of view, we want to inform the public as to the dangers from smoking.

I understand you wouldn't agree with the message we have to carry, but as far as the mechanics of delivering that message, that seems to me to be something that can be worked out, if that were the only problem.

Mr. **Horrigan**. Aside from the mechanics, we have also stated clearly in our testimony that we object to this kind of requirement or legislation because the requirements of those statements as put forth in the package are without foundation.

We have a right to be heard on that issue.

Mr. **Waxman**. I understand you don't agree with the message we have to deliver. I want to clarify the issues we have before us. I have been hearing that you don't agree with the message we have to deliver and you don't think this is an effective way to deliver the message.

We can dispose of this second item. It appears you are in agreement that having warning labels is an effective way of informing the public.

Mr. **Horrigan**. We are saying that the warning label, as it is presently constituted, is delivering the message that you have a concern for. We do not believe that these will serve any useful purpose. It will add to the clutter and it is terribly simplistic to say it can be worked out mechanically, because, Mr. Chairman, it will be extremely difficult for your own FTC as well as the manufacturers. You are leaving us in an open field.

Mr. **Waxman**. Well, it seems to me I am getting different messages here. Maybe that is one of the problems, the message is not clear and consistent. Dr. Light, you indicated one of the reasons you think our bill is deficient is that it violates one of the principles of advertising, and that is to be consistent and clear and simple.

And therefore, you think the warning label already required follows communications criteria for successful transmission of the message. Is that a correct statement?

Dr. **Light**. Yes, sir.

Mr. **Waxman**. I would like to ask of you, why is it that the cigarette industry feels that it must frequently vary the formats of advertisements and not rely on the same one? Why do you change the pictures or graphics? Certain things are consistent, but why are others changed?

Isn't it to try to get and maintain public attention, because they do get tired of seeing the same advertisement over and over? [See p. 187.]

Dr. **Light**. That is a very good example. If you look at it you will find elements we keep constant and there are elements we have. It is not true we have an ad. The intention is to keep the substance constant, and vary executional context. Now, if you look at that campaign, we consider it in fact a classic worldwide example, not just domestic example, but worldwide example of consistency, not of inconsistency.

Yes, it is true that the pictures change. It is also true there are elements that are consistent. Each has its own purpose. That campaign is an example of consistency of message. It is not designed to say a different thing to the consumer in ad one, versus ad two, versus ad three.

If we did advertising research on any one of those ads, we would expect the same message to come through. The message may be executed differently. Why? To get attention. Not to communicate different information.

Mr. **Waxman**. How much attention do you think the public is giving to the little label down here at the bottom that never varies? It is always the same and has what I consider a bland statement, "Warning: The Surgeon General has determined that cigarette smoking is dangerous to your health." The dangers aren't clarified.

The consumer looks at that and says, "Well, dangerous to your health, sure," if they see it at all.

Dr. **Light**. I don't know, but——

Mr. **Waxman**. If you were hired by us to do an advertising campaign to communicate the message that people shouldn't smoke because if they do they are risking their health, of course it is their decision, but to communicate that fact to them so they will be aware of it, would you recommend that the most effective thing we could do is to put the label down here at the bottom and never change it?

Dr. **Light** [continuing]. You have asked several questions. Let me see if I can remember. First, in terms of consistency, let's take the name Marlboro. It is very consistent. Same type style, same layout, same name repeated over and over again.

The package design. There are certain things clients keep constant, name, logo, basic theme line, symbols or signs.

Mr. **Waxman**. I don't understand which of my questions you are answering. It seems to me, the questions I would like you to answer are, one, do you think that the public, with that same warning label placed in the same location, really assesses that health message as effectively as they could?

And second, if you were advising us as an advertising expert on how to communicate the message we want to communicate, would you recommend the current label as the most effective way to communicate this message?

Dr. LIGHT. The first question as I was trying to say, I believe that the consistency is not a problem. It is an asset. What it means is that the consumer can quickly scan that page and by recognizing familiar symbols without carefully reading every word, reminding them what is in that symbol.

That is exactly why advertisers use symbols. Now, that white box with that type style is a symbol. I will pick an example of another ad. This is an ad in a language you might not understand.

I believe it is Chinese. But there is, because this ad appeared in the United States, a Surgeon General's warning in Chinese. But I believe that if we showed this advertisement to today's consumers and said, "What do you think is written in this box?" consumers who do not understand Chinese, they would play back the impression, the message associated with the Surgeon General's warning.

Mr. WAXMAN. The Federal Trade Commission said that fewer than 3 percent of the people who saw a cigarette ad read the warning label. How do you explain that fact? I am sure 100 percent could identify these as Marlboro cigarettes.

Dr. LIGHT. That is probably not true. But let's assume that if I show people an ad, my impression is that if I show people an advertisement and ask them what that said, they would play back the Surgeon General's warning. I believe if we did the research properly and did it as traditional research, we would show them the advertisement, and then not ask them what pieces of the ad people looked at on any given occasion.

People look at advertising campaigns, not at individual ads. What we are after in measuring the effectiveness of the campaign is the cumulative tracking studies, such as the Gallup survey, are what we use in our industry to evaluate what the net impression is of an advertising campaign.

It seems that that element, warning, that cigarette smoking may be dangerous to our health, is dangerous to your health, has been communicated to 90 percent of the people. That is a triumph.

Mr. WAXMAN. That is right.

Dr. LIGHT. Congratulations.

Mr. WAXMAN. Congratulations to you. You are the ones who are triumphing. You are making a tremendous amount of money, an unheard of amount of money selling a product, and you are doing it very successfully with advertisements that communicate the message to buy one brand or another and to take up the habit of smoking. Don't congratulate us. We have to pay the bill for those people when they get lung cancer or heart disease.

We have to pay for them when they get cancer and their insurance runs out if they had any at all. That is the problem we have. Please don't congratulate us. I congratulate you. Look at this advertisement. This must be one of your favorites, certainly one of your most effective.

It shows Kent cigarettes as a carton of ice cream. "Scoop on taste. Kent, of course," it says on the bottom. Now is the message of this advertisement, I am asking more out of curiosity than anything else, that smoking cigarettes is as good as eating ice cream? Or is this advertisement saying to people if you stop smoking cigarettes, you are going to get fat because you are going to eat ice cream? [See p. 260.]

Dr. **Light**. I doubt it is saying either of those two things. Is that a multiple choice?

Mr. **Waxman**. What does it say to you as an advertising expert? Is the message simple, consistent, et cetera?

Dr. **Light**. As I know, that advertising campaign, they have been running each ad associated with various food products. Research seems to suggest that in the low tar category, people are concerned with—that low-tar cigarettes don't taste very good.

And Kent is obviously hoping with this advertising to communicate that this particular brand has good taste delivery.

Mr. **Horrigan**. Mr. Chairman, pardon me, but back in your statement a few moments ago, for the record, you made the observation that our ads are designed to make people take up smoking. And that is not our objective at all. With regard to that particular campaign, I think, there is your picture, Mr. Waxman, Mr. Chairman, that is——

Mr. **Waxman**. I will take two of those.

Mr. **Horrigan** [continuing]. You present yourself to your customers, your voters in a very favorable way. With regard to our industry and our advertising for those millions of people who have made the decision to smoke we present the product in a pleasurable way because to those who smoke, it is a pleasurable habit.

So we present our product in a pleasurable way in the same way you, I think, when you run for office present yourself, but we do not urge people to take up smoking.

Mr. **Waxman**. I am not an expert in many things, but I know more than most people about campaigns. I know if there is an election going on and no contest, the voter turnout tends to be much lower. If there is a contest, competing candidates are trying to sell themselves. They are saying life is going to be more pleasurable if you vote for one as opposed to the another.

Obviously, candidates are trying to sell their brand, get the public to vote for them. But the consequence of that campaign is to increase voter turnout. More people participate in the election. I believe the impact of advertising, despite your claim it is only to attract smokers from one brand to another, increases the number of people who smoke.

Mr. **Horrigan**. Having been introduced, you recognize my background has been in other industries, let's say, where a far more open environment exists to compete in the marketplace. Our industry competes in a very restrictive, inhibited environment and therefore, within that, we know for a fact what is happening to the smoking population and the incidence of smoking.

So indeed, we have a very competitive industry. But it is in fact one of us going against the other, and another company going against the other and it is strictly a matter of brand preference and brand switching.

It is clear from the statistics and trend that we are not building the smoking population of America.

Mr. **Waxman**. Dr. Light, the Ted Bates Agency wrote in one of their advertising memoranda of a proposed campaign to attract teenagers, young people to cigarettes.

The quote that has been used a number of times in our hearings and came from a hearing of our oversight committee when they obtained the information from the Federal Trade Commission. It asserted that for the young smoker, the cigarette is not yet an integral part of life, of day-to-day life, in spite of the fact that they try to project the image of a regular, run-of-the-mill smoker.

For them, the cigarette, and whole smoking process, is part of the illicit pleasure category. In a young smoker's mind a cigarette falls into the same category with wine, beer, shaving, wearing a bra—or purposely not wearing one—declaration of independence and striving for self-identity.

For the young starter, a cigarette is associated with introduction to sex life, with courtship, with smoking pot, keeping late studying hours. This analysis is one of what young people, generally speaking, think about smoking, and I would assume that this information is translated into an advertising campaign that can encourage them to take up this habit, with a particular brand in mind.

It becomes a life-long habit.

Dr. Light. That assumption is incorrect.

Mr. Waxman. Oh. Tell me what is incorrect.

Dr. Light. Well, I had only arrived in the city and only joined Ted Bates several months ago. So I must tell you I only learned about the Viceroy——

Mr. Waxman. What were you doing before that?

Dr. Light [continuing]. I was with BBDO. But since the subject did come up, our legal counsel had briefed me on the issue. I have read the materials yesterday. And I think, for the record, it might be useful to review what did happen to that paragraph, because I think the statements you have made and assumptions you have made are incorrect.

Not that it has been inaccurately quoted, but it is incorrect that that quote was reflected in any advertising.

Mr. Waxman. Where did that quote come from then?

Dr. Light. Well, the circumstances were simple. The Ted Bates Agency, as I understand, was apparently in trouble on the Viceroy brand. There was no secret. The client had told the agency they were about to lose the account. The account group, being nervous, and that is certainly not a surprise, they are also human, initiated some research.

The first thing I should point out is that it was not Ted Bates' research. It was research conducted by a company called MARK, and the research report was written by a fellow called Cannon.

This was qualitative research, and the research report was written by the moderator of these focus group interviews.

Mr. Waxman. Wasn't the report written for the purpose of trying to figure out what would be a good test or strategy to sell cigarettes to young people?

Dr. Light. The research report was written by a moderator who, I don't know what purpose they ran it. But I can say that what did happen was that a——

Mr. Waxman. Why can't you imagine the purpose? Why do you think they were doing that? Do you think they are sociologists trying to figure out what kids like? They are discussing trying to sell cigarettes, saying what teenagers like.

I will certainly let you complete your statement.

Dr. **Light**. Thank you. There was a memo issued by an account executive who, concerned for the job, summarized the results of the research and presented those results to the client.

Now, the key thing is your assumption that advertising was then prepared and guided by this misguided research. My impression is, and I don't know, I haven't talked to Mr. Cannon, but it is that, knowing that the agency was in trouble and the account person was in trouble, maybe he was trying to ingratiate himself.

In any case, Brown & Williamson did not request any advertising be prepared based on that research. Advertising was not prepared or produced. The point of view in the document was not acted upon. No ads were ever produced based on that research or based on those words which you have quoted. And in my opinion, while the words do exist in a memo, they are quoted out of context and misrepresent the advertising process. It sometimes happens that there is an overzealous account group, maybe a misguided researcher, maybe somebody trying to save his job, in fact, doing just the opposite.

And unfortunately, an inappropriate memo is issued. But the truth is there are enough checks and balances on the clients side and on the agency's side to make sure that those kinds of things do not happen.

Mr. **Waxman**. I am going to interrupt you. I understand what you said. You have said it for the record. That is the assumption you make. The statement you have for us is that this is not an accurate statement of anything other than somebody who was trying to save his job, and it didn't even lead to an advertising campaign based on the report's conclusions.

Dr. **Light**. That is not—there is no advertising reflected on that.

Mr. **Waxman**. I would submit that I would think this person made the mistake of putting down in writing what goes on in advertising agencies all the time. And what goes on in advertising agencies all the time is how are they going to sell a product, and how are they going to expand the market.

Let me ask you a question along those lines. We have seen statistics that there has been an increase in lung cancer with women. We also see the statistics that there has been an increase in cigarette smoking among women.

Now, I know it is just statistics and may well be a coincidence, but can you imagine that perhaps women were taking up smoking in larger numbers over a period of time because there was some calculated effort to encourage them to take up smoking?

Mr. Horrigan, it looks like you are anxious to answer that.

Mr. **Horrigan**. If you don't mind, Mr. Chairman, I would like to answer the question, but let's go back a step further. I would like to speak on behalf of the industry because in corporations, there are executives who can get themselves in trouble, in Congress there are people in Congress who can get themselves in trouble. Do not——

Mr. **Waxman**. I want you to answer my question.

Mr. **Horrigan**. No.

Mr. **Waxman**. I am going to have to interrupt you. I don't want to be rude. I asked a specific question, I really want an answer to it.

Mr. **Horrigan**. I will answer it.

Mr. **Waxman**. Anything else you want to add, we will keep the record open.

Mr. **Horrigan**. Fine. With regard to the incidence of women smoking, the incidence rate is, in fact, declining. The numbers of females that are smoking is increasing as a function of population. However, when we look at cigarette smoking amongst the female population, we cannot look at that in isolation.

There is a lot of change in social behavior with regard to females in America. They are entering into the marketplace and they are picking up other characteristics. The man who drank a scotch at the airport and lit up 5 years ago now drinks white wine but the working girl may stop at the same bar at the airport and have a drink and light up a cigarette. It is a matter of social behavior.

Mr. **Waxman**. Do you imagine the adverstising campaign, "You have come a long way, baby," directed toward women to encourage them to be more liberated and with it to take up smoking, may have had some impact on their decision to take up smoking?

Mr. **Horrigan**. No, Mr. Chairman. In our testimony, we continue to hold to the position our advertising is not geared to increasing the smoking market, but when those people make that decision, and within that universe that company chooses to make that particular proposition to a female smoker, not a nonsmoker.

If I might——

Mr. **Waxman**. Yes.

Mr. **Horrigan**. Pardon me, Mr. Chairman. May I enter something for the record now? Is it appropriate, or later on?

Mr. **Waxman**. I am sorry, what did you want?

Mr. **Horrigan**. You said I would have a chance to come back and enter something in the record with regard to earlier comments.

Mr. **Waxman**. If you put it in writing, we will appreciate it.

Mr. Dannemeyer.

Mr. **Dannemeyer**. I think it is appropriate to ask the witness how long the statement he desires to make is. Is it lengthy, or what, sir?

Mr. **Horrigan**. A paragraph, Mr. Dannemeyer.

Mr. **Dannemeyer**. I think the gentleman should have the opportunity of responding. The chairman has pointed out he would have a chance. And that length of statement, I don't think, will burden any of us. The chairman has been a little aggressive, and I think he has a right to be, but I think the witness has a right to respond, too.

Mr. **Waxman**. I think the gentleman is speaking from the point of view of urging fairness. I will do this. I will recognize my colleagues, because I have taken up a lot of time. Should either of my colleagues wish to yield during their time, offer any additional comments, they are free to do so.

Mr. Bliley.

Mr. **Bliley**. Thank you, Mr. Chairman.

Mr. Horrigan, supposedly in this bill we were discussing rotational labeling. But the line of questioning that we have just been going through appears to me is based on maybe a ban of advertising.

Ban it all. We had testimony yesterday, and last Friday that, indeed, cigarette advertising has been banned in Norway and in Poland. And Italy. The evidence we were presented last Friday with regard to Norway and Poland, that since this has occurred, there has been no change in the volume of cigarettes sold in either Norway or Poland. That Italy has had total ban on cigarette advertising for 20 years, but that consumption is up.

Figures we were given were 60 percent. My question, Do you agree with that?

Mr. **Horrigan**. Yes, Mr. Bliley, I do. I have international tobacco responsibility and I have had consumer product experience around the world for other categories. Those same particular trends hold true. You cannot change human behavior or preferences as a function of stopping a particular advertising medium.

Mr. **Bliley**. The second question. Are you aware of any country that has banned cigarette smoking in which following the ban, there has been a change in consumption?

Mr. **Horrigan**. I am not aware of any. I am aware of the other reports you refer to, and the reverse effect, Mr. Bliley.

Mr. **Bliley**. I see. Now, if you have a statement that you want to put into the record, you can have it on my time.

Mr. **Horrigan**. Thank you, Mr. Bliley. I deeply appreciate that. I mentioned in my testimony that we are here this morning because we are a responsible and concerned industry. A statement made earlier, taking one particular marketing statement out of context and making the general assumption that that applies to how we as an industry market our products is grossly unfair as a mark upon our industry.

Dr. Larry Light has commented about how we stay in place. We have hundreds of people in the marketing process and we have checks and controls in place. And the integrity of the people within our company and the respect for the laws and the way we market our product is of the highest order. To say that people will not err within the process of the business place, the business market, that is not the way it is.

But I do not want anyone to leave here this morning with any assumption about the integrity of our industry or what our intentions are because that would be grossly unfair, taking one incident out of context. Thank you.

Mr. **Bliley**. Thank you very much. Speaking of out of context, Mr. Chairman, I had a copy of a letter delivered to me yesterday, sent to you on March 10 by the Roper Organization and signed by Mr. Burns, with Roper saying that, indeed, while his organization had been quoted and had done a study, that he didn't agree with the conclusions that were placed on it by the FTC, and others, and asked you to include in the record.

Do you intend to do so?

Mr. **Waxman**. I am surprised you got the letter before I did. I haven't seen that letter. But I am pleased to receive it. Without objection, the letter addressed to me on the letterhead of the Roper Organization by Burns W. Roper, chairman, dated March 10, 1982, will be made a part of the record.

[The letter referred to follows:]

THE ROPER ORGANIZATION INC.

BURNS W. ROPER
Chairman

March 10, 1982

The Honorable Henry Waxman
Chairman, Health Subcommittee
Committee on Energy and Commerce
U.S. House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

It is my understanding that your Subcommittee is currently holding hearings on HR 5653. This is the bill that implements the cigarette labeling requirements recommended in the Federal Trade Commission Staff Report On The Cigarette Advertising Investigation, dated May 1981.

2

At least two surveys conducted by the Roper Organization are cited extensively in that staff report in support of the report's contention that stronger and more varied cigarette warnings are required both on cigarette packages and in cigarette advertising. One of the studies so cited is the report of a private survey we conducted for the Tobacco Institute in 1978 which was subpoenaed by the FTC and subsequently publicly released by the FTC. The second was a survey we conducted specifically for the FTC in 1980.

In its staff report, the FTC does not directly attribute the conclusions reached (namely, that stronger and varied warnings are required) to our organization. However, the frequent references to our data carry the implication that the Roper studies support the report's conclusions.

I have no objections to the way the FTC staff reported the results of our surveys. To the extent that I have checked those facts, they are correct. I do, however, strongly disagree with the conclusions the FTC staff reaches based on those facts.

Because the FTC report relies so strongly on Roper data and because I disagree with their interpretations of that data, I respectfully request that this letter be included in the transcript of your hearings.

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The FTC staff concludes, based on our and other survey data, that the public is inadequately informed about the dangers of smoking. Using exactly the same data on which they base their conclusion, I would conclude almost exactly the opposite--that the public is highly aware of the reported dangers of smoking.

In our 1978 survey--conducted for the Tobacco Institute, not the Federal Trade Commission--we drew up a balance sheet in our summary of the survey's findings. The first two "liabilities" we cited to the industry's position were as follows:

> "1. More than nine out of every ten Americans believe that smoking is hazardous to a smoker's health.
>
> "2. A majority of Americans believe that it is probably hazardous to be around people who smoke, even if they are not smoking themselves."

I would submit that this hardly represents unwareness of the problem.

In dealing with our 1980 survey conducted for the FTC, the staff report notes on page 5-40:

> "Despite the dangers of carbon monoxide, many people are unaware of its presence in cigarette smoke. In the 1980 Roper study, 53% of the total sample and 56% of smokers did not know that cigarette smoke contains carbon monoxide."

While I do not quarrel with this finding, I do quarrel with its implication. I would submit that many also don't know that carbon monoxide is dangerous to one's health.

My fundamental quarrel with the FTC's contention is that they are expecting the public to possess a high level of detailed, rather technical information that it is wholly unrealistic to expect and that can probably never be achieved by any educational campaign, no matter how extensive it is, or of what duration it is.

An analogy: I would submit that most Americans know their cars have air pollution equipment installed in them, that substantially fewer know they have catalytic converters, and that very, very few know these catalytic converters contain platinum. Does this mean we need a campaign to acquaint people with the presence of platinum in the catalytic converters that constitute a major portion of the air pollution equipment in their cars?

On page 5-24 of the FTC staff report, the following statement appears based on our 1978 survey for the Tobacco Institute:

> "Sixty-one percent of those polled and 69% of the non-smokers polled favored the proposed new warning. Only 34% of those polled and 26% of the non-smokers favored the current warning."

The implication of this citation is that this shows the need for a stronger warning. To me, it shows the reverse. Sixty-one percent would not favor a stronger warning unless they were _already aware_ of the dangers.

Many of the FTC staff's conclusions that the public is unaware of specific dangers resulted from the incidences of "incorrect" answers--or guesses--on multiple-choice questions we asked on behalf of the FTC in our 1980 survey. These were questions that asked how many times more likely a smoker was than a non-smoker to get disease X and then offered four or five different ratios (e.g., less than twice as likely, twice as likely, five times as likely, ten times as likely, twenty times as likely). In response to almost all of these questions, the great majority of people answered more likely, even if they did not pick the precise number of times more likely that the FTC says is correct.

Where the frame of reference was reduced life expectancy, the great majority answered that the smoker experienced reduced life expectancy even if they were not able to guess the exact number of years.

If I were to ask you if the sun is a lot farther from the earth than the moon is, or a little farther from the earth than the moon is, or about the same distance from the earth as the moon is, you would have little trouble answering that it is a lot farther, thus indicating a high general awareness of the relationship of the sun and moon to the earth. But if I were to ask you whether the sun is 42.6 times as far from the earth as the moon is, or 121.8 times as far, or 266.3 times as far, or 389.1 times as far, it is possible you would not select the correct answer. (I would not have, either, and in fact I didn't know what the exact ratio was until I looked it up and computed it.) But I don't think this means we need a new educational campaign to make people aware how much farther the sun is from the earth than the moon is.

I would not argue that more severe and varied warnings would lessen public understanding of the dangers. But I would argue that they are unlikely to increase the awareness much, for it is already at a very high level.

My main purpose, however, is to dissociate our firm from the conclusions--though not the data--drawn from our surveys.

I am sending copies of this letter to each of the members of your Subcommittee as well as to our contacts at both the Federal Trade Commission and the Tobacco Institute. I am also including a copy of a letter I sent to Mr. Andrew Sacks of the FTC at the time we delivered our 1980 survey, a letter which has since been made public. In that letter I indicated that we concluded the survey showed high general awareness of the risks of smoking.

Respectfully yours,

Burns W. Roper

BWR/maa

THE ROPER ORGANIZATION INC.

BURNS W. ROPER
Chairman

December 5, 1980

Andrew Sacks, Esq.
Federal Trade Commission
414 11th Street, N.W.
Room 6415
Washington, D.C. 20058

Dear Mr. Sacks:

Each of my three partners and I (incidentally, two smokers, two non-smokers) have made a quick review of the results to your tack-on questions. It has been a quick review because of the need to get the print-outs to you before the deadline we promised.

Nevertheless, quick or not, it is our joint opinion that the results show a high general awareness of the dangers of smoking on health that the government, the Cancer Society and others have been promoting. There are exceptions--breast cancer, for example--but we would call it a generally high awareness.

There are some differences between smokers and non-smokers, with smokers being somewhat less inclined to acknowledge smoking as causal, but we are more impressed by the similarity of the answers given by smokers and non-smokers than by the differences.

Earlier I mentioned a high "general" awareness. By that I mean that while many people give technically wrong numerical relationships (e.g., "50 times more likely", "10 times as likely", "50% greater", "6 to 8 years less", etc.), most say there is a significantly greater chance of X, or a significant reduction in expected longevity, etc.

In this connection, we would point out something I mentioned on the phone when I spoke to you, namely, the effect of the alternatives that are put to respondents when they have only

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a general knowledge and not precise information. You will remember that we asked Q.32b with two different sets of answer options on the two different halves of the sample. One scale ran from less than twice as likely up to 20 times as likely; the other set of options ran from five times as likely to 50 times as likely. In each question there were five options, with the correct answer (10 times as likely) being the second option (second least frequent) for the Y sample and the next to last option (second most frequent) on the X half of the sample. The effect of the options posed to respondents as well as the measure of people's imprecise knowledge is shown by the difference in response to the correct answer in the two sample halves. Nearly four times as many people gave the correct answer when it was in the number two position on the list as when it was in the next to last position.

It is our view that this generalized knowledge, rather than precise knowledge, probably explains a good deal of the uncertainty in other questions that cited highly specific time frames or ratios, even though we don't have split-sampled evidence to document that feeling.

Sincerely yours,

Burns W. Roper

Mr. **Bliley**. I thank you very much. I have no further questions, Mr. Chairman.

Mr. **Waxman**. Mr. Dannemeyer.

Mr. **Dannemeyer**. I sit here and reflect on this warning label and reflect on the fact, if I heard correctly, that 96 percent of the people, or was it teenagers in this country, were aware——

Mr. **Horrigan**. Yes, Mr. Dannemeyer.

Mr. **Dannemeyer** [continuing]. Of health hazards associated with smoking, and still we are having a lot of cigarettes sold in the country. Maybe we adults should recognize the deficiency in our label. It says the Surgeon General, and I think a lot of people wonder who the Surgeon General is.

For those who know, he is associated with the Federal Government. I am reminded of that story about the person who comes to the citizens and says, "I am from the Government, and I want to help you."

The reaction of a lot of people in this country today, unfortunately, is to put their hands in their pocket and get out of there as quickly as they can. If we would put a label on cigarettes that says—since I come from Fullerton, Calif., which is the home of the California Angels, I'll use a couple of people there whose names are associated rather extensively in the sports world. If, say for instance, Rod Carew, most valuable player playing for the California Angels, said that, or if, Mohammed Ali or Reggie Jackson or somebody else—any of these names that are famous in American sports—put their names on that label, we might increase the attention level of people. Maybe our advertising community would have an opportunity of responding.

If more women are smoking today, the fact may be that it is the result of the women's liberation movement in our culture. Perhaps more women are working outside the home and they feel whatever pressures there are that cause people to smoke.

My closing comments would be these, Mr. Chairman. I suppose that someplace in America, sooner or later, a meeting of the Mafia high command would express the sentiment that some day they hope some plaintiff's lawyer is going to hit the tobacco industry of this country with a product liability suit and win because they are astute enough businessmen to recognize that, as a result, the legitimate tobacco producers would be driven right out of the industry. And this would just cause the greatest interest on the part of those interested in the illegal production and sale of cigarettes because we would be back in prohibition time again.

So I think we have an objective in mind of improving public health. It is laudable. I support that. The label is there for people to read and reflect on hopefully.

But you know, yesterday in this Chamber, we had a hearing on clean air. I have to ask, are we labeling coal consumed in powerplants of America, the burning of which is dangerous to your health? After all, we taxpayers spend, what is it, about $1 billion a year on black lung benefits. And I have forgotten how many people we kill a year each year mining coal in this country.

I am not aware we are labeling coal. Maybe we should in order to ameliorate human suffering, to ameliorate the adverse impact on people. Maybe we should label every type of energy produced and consumed in America because when we are honest about it, every one of them poses a risk to our health.

Thank you.

Mr. **Waxman**. Would the gentleman yield?

Mr. **Dannemeyer**. I would be happy to yield.

Mr. **Waxman**. I have listened to what the gentleman was saying quite carefully. There is a difference it seems to me in what we are doing in the Clean Air Act, trying to limit the amount of emissions in the air that people breathe. There is a choice to be made when someone picks up a package of cigarettes, decides to pull one out and light it up. That is a different situation than whether you are going to breathe the air or not.

I think in the one case, the question of the air, we have an obligation to protect the public from breathing hazardous air. In the case of cigarettes, I am not for prohibition. People are going to make a decision for themselves, but I want people to understand that if they are going to take up cigarette smoking, they are subjecting themselves to real health hazards. And there we have, I think, the obligation to encourage the public to be as knowledgeable as possible.

They certainly have a bombardment of advertising to make cigarette smoking seem attractive. I think they ought to be aware as they make a personal choice, where they have the opportunity to make a personal choice, about the other side as well.

Mr. **Dannemeyer**. I appreciate the gentleman's comment.

Mr. **Waxman**. Anything further by any members of the subcommittee?

I would comment that the Roper Organization's letter, which we made part of the record, was sent by express mail. We will probably get our copy soon but it indicates in this letter that they criticize the Federal Trade Commission staff conclusions that the public is inadequately informed about the dangers of smoking. This, I understand, is only one of five polling organizations that looked into public opinion on the subject.

The Roper letter indicates that in a survey they conducted for the Tobacco Institute, they found that 9 out of 10 Americans believe that smoking is hazardous.

Mr. Horrigan, Mr. Kornegay, Mr. Witt, Dr. Light, we thank you very much for being with us, for giving your views on these issues, and for anything else you might want to add to the record. We do want to be as fair as we can be in getting all the points of view before us before the Congress makes its decision.

Thank you very much.

Mr. **Horrigan**. Thank you, Mr. Chairman.

Mr. **Kornegay**. Thank you, Mr. Chairman, very much.

[Testimony resumes on p. 443.]

[The following letter and attached materials were submitted for the record:]

[illegible]

Congress of the United States
House of Representatives
Subcommittee on Health and the Environment
of the
Committee on Energy and Commerce
Washington, D.C. 20515

[illegible]

April 8, 1982

Edward A. Horrigan, Jr.
Chairman and Chief Executive Officer
R.J. Reynolds Tobacco Company
401 N. Main Street
Winston-Salem, North Carolina 27102

Dear Mr. Horrigan:

In order to supplement the hearing record of your testimony on March 12, 1982 regarding the "Comprehensive Smoking Prevention Education Act," I would appreciate your response to the attached list of questions and requests for information. Your assistance in responding by the close of business April 23, 1982 would be greatly appreciated.

Please contact Ripley Forbes of the Subcommittee staff if you have any questions.

With every good wish, I am,

Sincerely,

Henry A. Waxman

HENRY A. WAXMAN
Chairman, Subcommittee on
Health and the Environment

HAW/rfm

(1) Under product liability law, manufacturers are required to warn consumers about the dangers or risks associated with the use of their products. Please submit a legal opinion describing the obligation of the R.J. Reynolds Company to warn consumers of the risks of smoking cigarettes in the event the labeling provisions of the Federal Cigarette Labeling and Advertising Act are repealed. Indicate the specific dangers you would feel obligated to disclose to discharge your legal responsibilities.

(2) Briefly describe all cigarette related product liability litigation in which the R.J. Reynolds Company and other major U.S. cigarette manufacturers are presently involved.

(3) In testimony before the Subcommittee you indicated that there were approximately 200 individual cigarette brands marketed in the United States. Submit a list of these brands and indicate the market share and units sold of each for the years 1980 and 1981.

(4) In testimony before the Subcommittee you estimated that H.R. 5653 could present an additional annual cost to industry of $40 million. Submit for the Subcommittee a detailed analysis of how this cost figure was computed. Indicate how specific costs relating to changes in package labels are isolated from those attributed to advertising. With respect to additional advertising costs indicate how such costs are allocated between outdoor advertising, magazine advertising and newspaper advertising.

(5) Submit a list of those countries in which the R.J. Reynolds Company or its subsidiaries market cigarettes. Indicate those countries that require a health warning on either cigarette packages or advertisements.

(6) How many brands of cigarettes does the R.J. Reynolds Company sell in Great Britain? Where are the packages and advertisements produced and printed?

(7) How many brands of cigarettes does the R.J. Reynolds Company sell in Sweden? Where are the cigarette packages and advertisements produced and printed?

(8) Of the R.J. Reynolds Company's three largest selling brands of cigarettes, how many different magazine and newspaper advertisements were run in the United States during 1980 and 1981?

(9) How often are non-painted billboard advertisements, sponsored by the R.J. Reynolds Company, replaced or repaired? How often are painted billboard advertisements replaced or repaired? In an average year what is the ratio of non-painted to painted billboard advertisements?

(10) Describe the production process used to distribute magazine and newspaper advertising for publication. What is the average cost of typesetting the current warning label compared with the cost of producing an individual advertisement?

RJR

R. J. Reynolds Tobacco Company
Winston-Salem, N. C. 27102

Samuel B. Witt, III
Vice President
General Counsel and Secretary

April 29, 1982

Honorable Henry A. Waxman
Chairman, Subcommittee on Health and the Environment
United States House of Representatives
Washington, D. C. 20515

Dear Mr. Chairman:

I refer to your letter to Edward A. Horrigan, Jr. dated April 8, 1982 and the list of questions attached thereto. Mr. Horrigan has asked that I respond to your letter in his absence.

As you will recall, Mr. Horrigan appeared before your subcommittee on March 12, 1982 in his capacity as Chairman of the Executive Committee of The Tobacco Institute. In that capacity, he testified as spokesman for the tobacco industry and not as a representative of R. J. Reynolds Tobacco Company.

Enclosed are responses to Questions 1 through 7 attached to your letter.

Certain aspects of questions 8 through 10 attached to your letter would require the disclosure by R. J. Reynolds Tobacco Company of highly sensitive information from a competitive standpoint. For example, R. J. Reynolds Tobacco Company has its own internal media department which we believe is able to achieve certain efficiencies that our competitors cannot. In addition, all members of our industry compensate their advertising agencies on different bases and we consider it unfair to require our Company to disclose information of this nature.

Accordingly, I respectfully request that you reconsider the appropriateness of questions 8 through 10 in view of Mr. Horrigan's position as an industry spokesman and the nature of the information requested.

Very truly yours,

Samuel B. Witt, III, Esq.

SBW:rym
Attachments

Telephone (919) 777-5093 Telex 806483 RJR CENT WSL B Telecopier (919) 777-6885

QUESTION 1: Under product liability law, manufacturers are required to warn consumers about the dangers or risks associated with the use of their products. Please submit a legal opinion describing the obligation of the R. J. Reynolds Company to warn consumers of the risks of smoking cigarettes in the event the labeling provisions of the Federal Cigarette Labeling and Advertising Act are repealed. Indicate the specific dangers you would feel obligated to disclose to discharge your legal responsibilities.

RESPONSE: In view of the litigation in which Reynolds is presently involved (see answer to Question 2 below), it is Counsel's opinion that it would be inadvisable to comment further on this subject.

QUESTION 2: Briefly describe all cigarette related product liability litigation in which the R. J. Reynolds Company and other major U.S. cigarette manufacturers are presently involved.

RESPONSE: There are three types of cigarette-related product liability litigation in which R. J. Reynolds Tobacco Company and other major U.S. cigarette manufacturers are presently involved: (a) suits seeking damages for cancer or other ailments allegedly caused by cigarettes; (b) third-party suits seeking contribution or indemnity with respect to damages for which defendants may be liable; and (c) suits seeking damages for fires allegedly ignited by cigarettes.

QUESTION 3: In testimony before the Subcommittee you indicated that there were approximately 200 individual cigarette brands marketed in the United States. Submit a list of these brands and indicate the market share and units sold of each for the years 1980 and 1981.

RESPONSE: Attached as Exhibit A is a list of all cigarette brands marketed in the United States (on which sales volume data is available) indicating the units sold of each for the years 1980 and 1981. Attached as Exhibit B is a list of all brands marketed in the United States (on which share of market data is available) indicating the market share of each for the years 1980 and 1981.

QUESTION 4: In testimony before the Subcommittee you estimated that H.R. 5653 could present an additional annual cost to industry of $40 million. Submit for the Subcommittee a detailed analysis of how this cost figure was computed. Indicate how specific costs relating to changes in package labels are isolated from those attributed to advertising. With respect to additional advertising costs indicate how such costs are allocated between outdoor advertising, magazine advertising and newspaper advertising.

RESPONSE: The Tobacco Industry's opposition to H.R. 5653, as indicated in Mr. Horrigan's testimony, is not based upon the potential costs of compliance. In the Industry's view, economics are not the primary issue. The Tobacco Industry is opposing this bill because the findings underlying it are incorrect and unsubstantiated, because it is unnecessary and because its true objective is the abolition of smoking.

The figure given during Mr. Horrigan's testimony was a very rough estimate in an effort to respond Mr. Bliley's question. Insofar as the costs associated with compliance do not form the basis for our industry's opposition to this Bill, we simply have not spent the considerable time, effort and expense necessary to fully respond to this question.

In our view, regardless of the costs to the Tobacco Industry which would be associated with compliance, the costs to the judicial system, the Federal Government and the taxpayer would be substantial and totally unwarranted in view of the public's present level of awareness of the claims made about smoking and health.

QUESTION 5: Submit a list of those countries in which the R. J. Reynolds Company or its subsidiaries market cigarettes. Indicate those countries that require a health warning on either cigarette packages or advertisements.

RESPONSE: Attached as Exhibit C is a list of those countries in which R. J. Reynolds Tobacco Company and its affiliated companies actively market cigarettes and which indicates those countries which require health warnings on cigarette packages or advertisements. While R. J. Reynolds Tobacco Company and its affiliates sell more than fifty brands in one hundred sixty countries and territories around the world, the countries and territories reflected on the attached list represent our more active markets.

QUESTION 6: How many brands of cigarettes does the R. J. Reynolds Company sell in Great Britain? Where are the packages and advertisements produced and printed?

RESPONSE: R. J. Reynolds Tobacco Company and its affiliated companies sell a total of eight brands of cigarettes in the United Kingdom and the Republic of Ireland. Packaging is produced and printed in Germany and advertisements are generally produced and printed in the United Kingdom.

QUESTION 7: How many brands of cigarettes does the R. J. Reynolds Company sell in Sweden? Where are the cigarette packages and advertisements produced and printed?

RESPONSE: R. J. Reynolds Tobacco Company and its affiliated companies sell a total of six brands of cigarettes in Sweden. Packaging is produced and printed in Germany and in Sweden. Advertisements are generally produced and printed in Sweden.

EXHIBIT A

DATE: 4/19/1982
2/82

TOTAL US
VOLUME
YEARS

NAME	YEAR 1980 VOL	YEAR 1981 VOL
AMERICAN LONGS F 120	0.	0.
AMERICAN LONGS M 120	0.	0.
TOT AMER LONGS	0.	0.
BULL DURHAM	11621.	9262.
TOT BULL DURHAM	11621.	9262.
CARLTON FILTER 85	5001713.	4111829.
CARLTON MENTHOL 70	0.	0.
CARLTON 70 BOX	0.	0.
CARLTON 85 BOX	343230.	52979.
CARLTON FILTER 70	0.	0.
CARLTON FILTER 100	5524069.	4671360.
CARLTON MENTHOL 100	2287060.	2074383.
CARLTON MENTHOL 85	1870618.	1583627.
CARLTON FIL 100 BOX	462722.	867323.
CARLTON MEN 100 BOX	0.	3953.
CARLTON FILTER 120	0.	236208.
CARLTON MENTHOL 120	0.	177369.
TOT CARLTON	15489412.	13779031.
HALF & HALF	64617.	57896.
TOT HALF & HALF	64617.	57896.
ICEBERG MENTHOL 100	68928.	47544.
TOT ICEBERG	68928.	47544.
LUCKY STRIKE.REGULAR	6075550.	5570721.
LUCKY STRIKE FIL 85	0.	0.
LUCKY STRIKE FIL 100	60762.	37300.
LUCKY 100	0.	0.
LUCKY TEN	35531.	15279.
LUC STRIKE LO TAR SP	0.	3243.
LUC STRIK LO TAR BOX	0.	3204.
TOT LUCKY STRIKE	6171843.	5629747.
MONTCLAIR	29702.	22061.
TOT MONTCLAIR	29702.	22061.
LONG JOHNS F 120	17901.	13925.
LONG JOHNS M 120	7365.	5158.
TOT LONG JOHNS	25266.	19083.
PALL MALL KING	24111242.	22498428.
PALL MALL FIL 100	6168496.	5784201.
PALL MALL MEN 100	-76.	0.
PALL MALL FILTER 85	93693.	67805.
PALL MALL EXTRA LTS	143119.	101525.
PALL MALL BOX	0.	0.

DATE: 4/19/1982
2/82

TOTAL US
VOLUME
YEARS

NAME	YEAR 1980	YEAR 1981
	VOL	VOL
PALL MALL LTS M 100	316903.	207053.
PALL MALL LTS F 100	671386.	423909.
TOT PALL MALL	31504763.	29142921.
SILVA THINS F 100	831685.	702067.
SILVA THINS M 100	428665.	338414.
TOT SILVA THINS	1260350.	1040481.
SUPER M MENTHOL 100	0.	0.
TOT SUPER M	0.	0.
TAREYTON FILTER 85	4600705.	4110660.
TAREYTON FILTER 100	3568878.	3280567.
TAREYTON LIGHTS 85	945315.	635944.
TAREYTON LIGHTS 100	1104443.	893785.
TAREYTON LIGHTS MENT	-15121.	0.
TAREYTON ULTRA MENT	11863.	-9198.
TOT TAREYTON	10216083.	8911758.
HERBERT TAREYTON	198124.	182019.
TOT H TAREYTON	198124.	182019.
TWIST MENTHOL 100	-2108.	-2916.
TOT TWIST	-2108.	-2916.
TALLS FILTER 120	378678.	349496.
TALLS MENTHOL 120	110116.	98793.
TOT TALLS	488794.	448289.
AMERICAN LIGHTS F120	29248.	16627.
AMERICAN LIGHTS M120	10900.	5464.
TOT AMERICAN LTS	40148.	22091.
ATC MISC	0.	0.
ALL OTHER ATC	0.	0.
TOT ATC CIGT.	65567543.	59309267.
BELAIR 85	4131720.	3768283.
BELAIR 100	3050154.	3005705.
TOT BELAIR	7181874.	6773988.
DUMAURIER FILTER BOX	34317.	29583.
TOT DUMAURIER	34317.	29583.
FACT FILTER	0.	0.
FACT MENTHOL	0.	0.
TOT FACT	0.	0.
KOOL REGULAR	639324.	571632.
KOOL FILTER 85	31741063.	29839066.
KOOL FILTER 100	8990471.	9166238.
KOOL MILDS 85	5707643.	5986713.
KOOL BOX	2114460.	2077740.

DATE: 4/19/1982
2/82

TOTAL US
VOLUME
YEARS

	YEAR 1980	YEAR 1981
NAME	VOL	VOL
KOOL NON MENTHOL	0.	0.
KOOL SUPER LIGHTS 85	2166120.	1678693.
KOOL SUPER LIGHT 100	2206344.	1836444.
KOOL MILDS 100	659346.	719130.
KOOL INTER BOX	1332.	0.
KOOL LIGHTS 85	0.	276552.
KOOL LIGHTS 100	0.	299280.
KOOL ULTRA 85	0.	218064.
KOOL ULTRA 100	0.	224784.
TOT KOOL	54226103.	52894336.
RALEIGH KING	904554.	815814.
RALEIGH FILTER 85	5215895.	4646578.
RALEIGH FILTER 100	2839547.	2779264.
RALEIGH LIGHTS 85	1351494.	1290108.
RALEIGH LIGHTS 100	931338.	1046868.
TOT RALEIGH	11242828.	10578632.
VICEROY 85	6596064.	5929865.
VICEROY 100	1930349.	1797593.
VICEROY MILDS	0.	0.
VICEROY RICH LTS 85	1162601.	840354.
VICEROY RICH LTS 100	1103256.	822774.
TOT VICEROY	10792270.	9390586.
ARCTIC LIGHTS 85	285342.	65046.
ARCTIC LIGHTS 100	461490.	113094.
TOT ARCTIC	746832.	178140.
SPIRIT FILTER 85	0.	0.
SPIRIT FILTER 100	0.	0.
TOT SPIRIT	0.	0.
BARCLAY FILTER 85	132876.	2975349.
BARCLAY FILTER 100	115284.	2627023.
BARCLAY FILTER BOX	9030.	890820.
BARCLAY MENTHOL 85	0.	697767.
BARCLAY MENTHOL 100	0.	712584.
TOT BARCLAY	257190.	7903563.
TOT B & W CIGT.	84481414.	87748828.
CHESTERFIELD REGULAR	558227.	.502841.
CHESTERFIELD KING	3032038.	2861361.
CHESTERFIELD FILTER	51806.	38832.
CHESTERFIELD 101	164549.	133983.
TOT CHESTERFIELD	3806620.	3537017.
EAGLES FILTER	0.	0.

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TOTAL US
VOLUME
YEARS

NAME	YEAR 1980 VOL	YEAR 1981 VOL
EAGLES MENTHOL	0.	0.
TOT EAGLE	0.	0.
EVE FILTER 100	434408.	361736.
EVE MENTHOL 100	276930.	233344.
EVE LTS FIL 120 BOX	103193.	465672.
EVE LTS MEN 120 BOX	90917.	354880.
EVE LTS FILTER 100	0.	0.
EVE LTS MENTHOL 100	0.	0.
TOT EVE	905448.	1415632.
DECADE FILTER	164094.	58611.
DECADE MENTHOL	40007.	610.
DECADE FILTER 100	22623.	5666.
TOT DECADE	226724.	64887.
L&M 85	3958699.	3608377.
L&M BOX	94644.	80084.
L&M FILTER 100	1169535.	1080548.
L&M LIGHTS MEN 100	155600.	59459.
L&M FLAVOR LIGHTS	201364.	132986.
L&M LONG LIGHTS	630385.	487518.
TOT L & M	6210227.	5448972.
LARK FILTER	1835082.	1607743.
LARK 100	955720.	857471.
LARK II	-19.	0.
LARK LIGHTS 85	67840.	55207.
LARK LIGHTS 100	80541.	62825.
TOT LARK	2939164.	2583246.
OMNI MENTHOL 100	0.	10506.
TOT OMNI	0.	10506.
ST MORITZ FIL 100	-59.	0.
ST MORITZ MEN 100	-34.	0.
TOT ST MORITZ	-93.	0.
GENERIC(LIG)LTS	213336.	2150903.
GENERIC(LIG)LTS M	0.	255522.
GENERIC(LIG)LTS 100	16896.	389126.
GENERIC(LIG)LTS M100	0.	90528.
TOT GENERIC(LIG)	230232.	2886079.
VELLO FILTER	0.	0.
VELLO MENTHOL	0.	0.
TOT VELLO	0.	0.
L & M MISC	54023.	40691.
ALL OTHER L&M	54023.	40691.

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TOTAL US
VOLUME
YEARS

NAME	YEAR 1980 VOL	YEAR 1981 VOL
TOT L & M CIGT.	14372345.	15987030.
BISTRO LIGHT FILTER	0.	1801.
BISTRO LIGHT MENTHOL	0.	1110.
TOT BISTRO	0.	2911.
GOLDEN LIGHTS FIL 85	5306973.	4339925.
GOLDEN LIGHTS MEN 85	453567.	344772.
GOLDEN LIGHTS F 100	4246743.	3900708.
GOLDEN LIGHTS M 100	1050540.	882920.
TOT GOLDEN LIGHTS	11057823.	9468325.
KENT 85	7549611.	6860159.
KENT 85 BOX	219693.	199487.
KENT FILTER 100	4307558.	3977991.
KENT MENTHOL 100	137699.	102193.
KENT III 85	4766805.	4010285.
KENT III 100	3030449.	3245666.
TOT KENT	20011815.	18395781.
HERITAGE 85	0.	1435.
HERITAGE 100	0.	1425.
TOT HERITAGE	0.	2860.
REBEL 85	0.	1971.
REBEL 100	0.	1743.
TOT REBEL	0.	3714.
MAX FILTER 120	619489.	585359.
MAX MENTHOL 120	321319.	291084.
MAX SLIM LT F 100 BX	0.	0.
MAX SLIM LT M 100 BX	0.	0.
TOT MAX	940808.	876443.
MAVERICK FILTER 85	0.	3430.
MAVERICK FILTER 100	0.	3797.
TOT MAVERICK	0.	7227.
NEWPORT 85	6156139.	7008149.
NEWPORT BOX	2841130.	3328123.
NEWPORT 100	1132391.	1401223.
NEWPORT LIGHTS 85	1228502.	1312073.
NEWPORT LIGHTS 85 BX	140211.	273448.
NEWPORT NON-MEN SP	0.	203905.
NEWPORT NON-MEN BOX	0.	148725.
NEWPORT LIGHTS 100	0.	139909.
TOT NEWPORT	11498373.	13815555.
OLD GOLD REGULAR	0.	0.
OLD GOLD KING	109019.	88197.

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TOTAL US
VOLUME
YEARS

NAME	YEAR 1980 VOL	YEAR 1981 VOL
OLD GOLD FILTER 85	1613173.	1428689.
OLD GOLD FILTER 100	312403.	279391.
OLD GOLD BOX	0.	0.
OLD GOLD LIGHTS	389134.	370819.
TOT OLD GOLD	2423729.	2167096.
SPRING MENTHOL 100	93163.	71087.
TOT SPRING	93163.	71087.
TRUE FILTER 85	4524749.	3859247.
TRUE MENTHOL 85	2166078.	1910483.
TRUE FILTER 100	2733535.	2552577.
TRUE MENTHOL 100	1475224.	1409534.
TRUE ULTRA ONE	8406.	1343.
TOT TRUE	10907992.	9733184.
TRIUMPH FILTER 85	1700735.	1001586.
TRIUMPH MENTHOL 85	743518.	439220.
TRIUMPH FILTER 100	4191.	427952.
TRIUMPH MENTHOL 100	3309.	295976.
TOT TRIUMPH	2451753.	2164734.
ASPEN 85	4228.	0.
ASPEN 100	4275.	0.
TOT ASPEN	8503.	0.
P LORILLARD MISC	1560.	2737.
ALL OTHER P LOR	1560.	2737.
TOT P LOR CIGT.	59395519.	56711654.
ALPINE MENTHOL 85	458697.	392551.
TOT ALPINE	458697.	392551.
HI LIGHT 100 BOX	3168.	2256.
TOT HI LIGHT	3168.	2256.
NORTHWINDS MEN 85	0.	21307.
NORTHWINDS MEN 100	0.	20445.
TOT NORTHWINDS	0.	41752.
B & H REGULAR BOX	2800.	2240.
B & H FILTER 100	8474484.	8062732.
B & H MENTHOL 100	6742715.	6892742.
B & H FIL 100 BOX	1009806.	955612.
B & H MEN 100 BOX	649821.	617857.
B & H KING BOX	93166.	87310.
B & H LTS F 100	5649248.	5970230.
B & H LTS F 100 BOX	10943.	11982.
B & H LTS M 100	4906362.	5300534.
B & H LTS M 100 BOX	6499.	7733.

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TOTAL US
VOLUME
YEARS

NAME	YEAR 1980 VOL	YEAR 1981 VOL
B&H DELUX ULTS F100B	0.	0.
B&H DELUX ULTS M100B	0.	0.
TOT B & H	27545344.	27908972.
BENSON HEDGES MULT F	783816.	650157.
BENSON HEDGES MULT M	53748.	42103.
TOT MULTIFILTER	837564.	692260.
ENGLISH OVALS K BOX	17979.	17575.
ENGLISH OVALS R BOX	11200.	10346.
TOT ENGLISH OVALS	29179.	27921.
GALAXY FILTER	19463.	15143.
TOT GALAXY	19463.	15143.
MERIT FILTER 85	13645071.	12260337.
MERIT MENTHOL 85	2728576.	2245396.
MERIT FILTER 100	7615977.	7713160.
MERIT MENTHOL 100	2020693.	1970436.
MERIT ULTRA LTS F 85	29986.	2210359.
MERIT ULTRA LTS M 85	19279.	1064531.
MERIT ULT LTS F 100	0.	384210.
MERIT ULT LTS M 100	0.	264895.
TOT MERIT	26059582.	28119324.
MARLBORO 85	35044396.	34638252.
MARLBORO BOX	35805793.	35448164.
MARLBORO FIL 100	10779645.	11171482.
MARLBORO FIL 100 BOX	4187396.	4472940.
MARLBORO MENTHOL	1312188.	1371013.
MARLBORO LIGHTS 85	14397753.	14814379.
MARLBORO MENTHOL BOX	60835.	61397.
MARLBORO LIGHTS 100	6925810.	8383436.
MARLBORO LIGHTS BOX	1071269.	4409806.
TOT MARLBORO	109585085.	114770869.
PARLIAMENT LTS 85	2282953.	2093643.
PARLIAMENT LTS BOX	2365436.	2259843.
PARLIAMENT LTS 100	2818073.	2786764.
PARLIAMENT ULTRA LTS	0.	0.
TOT PARLIAMENT	7466462.	7140250.
P MORRIS INTER F BOX	20075.	23283.
P MORRIS INTER M BOX	4835.	5281.
TOT P.MOR INTER	24910.	28564.
P MORRIS REGULAR	156946.	133998.
P MORRIS KING	957267.	859838.
TOT P MORRIS	1114213.	993836.

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TOTAL US
VOLUME
YEARS

	YEAR 1980	YEAR 1981
NAME	VOL	VOL
SARATOGA FIL 120 BOX	1536580.	1532132.
SARATOGA MEN 120 BOX	739477.	735693.
TOT SARATOGA	2276057.	2267825.
V. SLIMS FILTER 100	4195148.	4225730.
V. SLIMS MENTHOL 100	3876017.	3876602.
V. SLIMS LTS F 100	0.	0.
V. SLIMS LTS M 100	0.	0.
V.SLIMS LTS F 100 BX	2737915.	3322789.
V.SLIMS LTS M 100 BX	3355792.	4122316.
TOT VA SLIMS	14164872.	15547437.
BASIC 85	0.	0.
BASIC 100	0.	0.
TOT BASIC	0.	0.
APOLLO-SOYSU	0.	0.
PLAYERS BOX	15860.	15906.
TOT PLAYERS	15860.	15906.
CAMBRIDGE 85 SP	570825.	419699.
CAMBRIDGE 85 BOX	95893.	26880.
CAMBRIDGE 100	919944.	1024190.
TOT CAMBRIDGE	1586662.	1470769.
PHILIP MORRIS MISC	3651.	113.
ALL OTHER PM	3651.	113.
TOT P MOR CIGT.	191191270.	199435752.
CAMEL REGULAR	14068232.	14430421.
CAMEL FILTER	5697666.	6985546.
CAMEL FILTER BOX	0.	170.
CAMEL LIGHTS 85	5094071.	6070724.
CAMEL LIGHTS 100	1464751.	1813432.
CAMEL LIGHTS MP	322935.	723952.
TOT CAMEL	26647655.	30024245.
DORAL FILTER	1082023.	-54.
DORAL MENTHOL	692875.	222.
DORAL II FILTER	899826.	1021027.
DORAL II MENTHOL	626950.	756097.
TOT DORAL	3301674.	1777292.
MORE FILTER 120	3962576.	4195483.
MORE MENTHOL 120	3136116.	3376907.
MORE LTS FIL 100 BOX	0.	947726.
MORE LTS MEN 100 BOX	0.	787593.
TOT MORE	7098692.	9307709.
NOW FILTER BOX	241712.	35270.

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DATE:  4/19/1982                          TOTAL US
       2/82                               VOLUME
                                           YEARS
                                       ---------------

                              YEAR  1980         YEAR  1981
                            --------------     --------------
        NAME                     VOL                VOL
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NOW MENTHOL BOX                   88501.                12.
NOW FILTER SP                   1574103.           1380920.
NOW MENTHOL SP                   812423.            712826.
NOW FILTER 100                  1085666.           1221170.
NOW MENTHOL 100                  739483.            818338.
NOW 100 BOX                           0.             29538.
  TOT NOW                       4541888.           4198074.
SALEM 85                       17262874.          16700943.
SALEM 100                      10684769.          10590660.
SALEM BOX                        442166.                19.
SALEM LIGHTS 85                13767937.          13964775.
SALEM LIGHTS 100                9450278.           9765127.
SALEM ULTRA LTS 85               978552.           1301752.
SALEM ULTRA LTS 100             1285561.           2561647.
SALEM SLIM LTS100 BX                  0.            212004.
  TOT SALEM                    53872139.          55096927.
TEMPO                              8868.                 0.
  TOT TEMPO                        8868.                 0.
VANTAGE FILTER                 11453456.          11281658.
VANTAGE MENTHOL                 2811821.           2734142.
VANTAGE 100                     4680274.           4739798.
VANTAGE ULT LTS 85              2319158.           2141949.
VANTAGE ULT LTS 100             2371104.           2459181.
  TOT VANTAGE                  23635813.          23356728.
WINSTON 85                     42784413.          41550234.
WINSTON BOX                     2632087.           2650027.
WINSTON 100                    13620181.          13784024.
WINSTON MENTHOL 100              433200.                 0.
WINSTON LIGHTS 85              14467370.          14241267.
WINSTON LIGHTS 100              7394558.           7796265.
WINSTON ULT LTS 85               239451.           1275629.
WINSTON ULT LTS 100              232275.           2114241.
WINSTON INTER BOX                  7605.             11305.
  TOT WINSTON                  81811140.          83422992.
DAWN FILTER 120                       0.                 0.
  TOT DAWN                            0.                 0.
REAL FILTER                      630974.               -18.
REAL MENTHOL                     193571.                 6.
  TOT REAL                       824545.               -12.
BROOKWOOD FILTER                   1947.                 0.
  TOT BROOKWOOD                    1947.                 0.
    TOT RJR CIGT.             201744364.         207183958.
MISC COMPANIES                   123329.            125283.
   TOT MISC COMP                 123329.            125283.
     TOT OTHERS                  123329.            125283.
     TOT INDUSTRY             616875792.         626501768.
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EXHIBIT B

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TOTAL US
SOM
YEARS

NAME	YEAR 1980 SOM	YEAR 1981 SOM
AMERICAN LONGS F 120	.00	.00
AMERICAN LONGS M 120	.00	.00
TOT AMER LONGS	.00	.00
BULL DURHAM	.00	.00
TOT BULL DURHAM	.00	.00
CARLTON FILTER 85	.81	.66
CARLTON MENTHOL 70	.00	.00
CARLTON 70 BOX	.00	.00
CARLTON 85 BOX	.06	.01
CARLTON FILTER 70	.00	.00
CARLTON FILTER 100	.90	.75
CARLTON MENTHOL 100	.37	.33
CARLTON MENTHOL 85	.30	.25
CARLTON FIL 100 BOX	.08	.14
CARLTON MEN 100 BOX	.00	.00
CARLTON FILTER 120	.00	.04
CARLTON MENTHOL 120	.00	.03
TOT CARLTON	2.51	2.20
HALF & HALF	.01	.01
TOT HALF & HALF	.01	.01
ICEBERG MENTHOL 100	.01	.01
TOT ICEBERG	.01	.01
LUCKY STRIKE REGULAR	.98	.89
LUCKY STRIKE FIL 85	.00	.00
LUCKY STRIKE FIL 100	.01	.01
LUCKY 100	.00	.00
LUCKY TEN	.01	.00
LUC STRIKE LO TAR SP	.00	.00
LUC STRIK LO TAR BOX	.00	.00
TOT LUCKY STRIKE	1.00	.90
MONTCLAIR	.00	.00
TOT MONTCLAIR	.00	.00
LONG JOHNS F 120	.00	.00
LONG JOHNS M 120	.00	.00
TOT LONG JOHNS	.00	.00
PALL MALL KING	3.91	3.59
PALL MALL FIL 100	1.00	.92
PALL MALL MEN 100	.00	.00
PALL MALL FILTER 85	.02	.01
PALL MALL EXTRA LTS	.02	.02
PALL MALL BOX	.00	.00

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YEARS

NAME	YEAR 1980 SOM	YEAR 1981 SOM
PALL MALL LTS M 100	.05	.04
PALL MALL LTS F 100	.11	.07
TOT PALL MALL	5.11	4.65
SILVA THINS F 100	.13	.11
SILVA THINS M 100	.07	.05
TOT SILVA THINS	.20	.17
SUPER M MENTHOL 100	.00	.00
TOT SUPER M	.00	.00
TAREYTON FILTER 85	.75	.66
TAREYTON FILTER 100	.58	.52
TAREYTON LIGHTS 85	.15	.10
TAREYTON LIGHTS 100	.18	.14
TAREYTON LIGHTS MENT	.00	.00
TAREYTON ULTRA MENT	.00	.00
TOT TAREYTON	1.66	1.42
HERBERT TAREYTON	.03	.03
TOT H TAREYTON	.03	.03
TWIST MENTHOL 100	.00	.00
TOT TWIST	.00	.00
TALLS FILTER 120	.06	.06
TALLS MENTHOL 120	.02	.02
TOT TALLS	.08	.07
AMERICAN LIGHTS F120	.00	.00
AMERICAN LIGHTS M120	.00	.00
TOT AMERICAN LTS	.01	.00
ATC MISC	.00	.00
ALL OTHER ATC	.00	.00
TOT ATC CIGT.	10.63	9.47
BELAIR 85	.67	.60
BELAIR 100	.49	.48
TOT BELAIR	1.16	1.08
DUMAURIER FILTER BOX	.01	.00
TOT DUMAURIER	.01	.00
FACT FILTER	.00	.00
FACT MENTHOL	.00	.00
TOT FACT	.00	.00
KOOL REGULAR	.10	.09
KOOL FILTER 85	5.15	4.76
KOOL FILTER 100	1.46	1.46
KOOL MILDS 85	.93	.96
KOOL BOX	.34	.33

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YEARS

NAME	YEAR 1980 SOM	YEAR 1981 SOM
KOOL NON MENTHOL	.00	.00
KOOL SUPER LIGHTS 85	.35	.27
KOOL SUPER LIGHT 100	.36	.29
KOOL MILDS 100	.11	.11
KOOL INTER BOX	.00	.00
KOOL LIGHTS 85	.00	.04
KOOL LIGHTS 100	.00	.05
KOOL ULTRA 85	.00	.03
KOOL ULTRA 100	.00	.04
TOT KOOL	8.79	8.44
RALEIGH KING	.15	.13
RALEIGH FILTER 85	.85	.74
RALEIGH FILTER 100	.46	.44
RALEIGH LIGHTS 85	.22	.21
RALEIGH LIGHTS 100	.15	.17
TOT RALEIGH	1.82	1.69
VICEROY 85	1.07	.95
VICEROY 100	.31	.29
VICEROY MILDS	.00	.00
VICEROY RICH LTS 85	.19	.13
VICEROY RICH LTS 100	.18	.13
TOT VICEROY	1.75	1.50
ARCTIC LIGHTS 85	.05	.01
ARCTIC LIGHTS 100	.07	.02
TOT ARCTIC	.12	.03
SPIRIT FILTER 85	.00	.00
SPIRIT FILTER 100	.00	.00
TOT SPIRIT	.00	.00
BARCLAY FILTER 85	.02	.47
BARCLAY FILTER 100	.02	.42
BARCLAY FILTER BOX	.00	.14
BARCLAY MENTHOL 85	.00	.11
BARCLAY MENTHOL 100	.00	.11
TOT BARCLAY	.04	1.26
TOT B & W CIGT.	13.70	14.01
CHESTERFIELD REGULAR	.09	.08
CHESTERFIELD KING	.49	.46
CHESTERFIELD FILTER	.01	.01
CHESTERFIELD 101	.03	.02
TOT CHESTERFIELD	.62	.56
EAGLES FILTER	.00	.00

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TOTAL US
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YEARS

NAME	YEAR 1980 SOM	YEAR 1981 SOM
EAGLES MENTHOL	.00	.00
TOT EAGLE	.00	.00
EVE FILTER 100	.07	.06
EVE MENTHOL 100	.04	.04
EVE LTS FIL 120 BOX	.02	.07
EVE LTS MEN 120 BOX	.01	.06
EVE LTS FILTER 100	.00	.00
EVE LTS MENTHOL 100	.00	.00
TOT EVE	.15	.23
DECADE FILTER	.03	.01
DECADE MENTHOL	.01	.00
DECADE FILTER 100	.00	.00
TOT DECADE	.04	.01
L&M 85	.64	.58
L&M BOX	.02	.01
L&M FILTER 100	.19	.17
L&M LIGHTS MEN 100	.03	.01
L&M FLAVOR LIGHTS	.03	.02
L&M LONG LIGHTS	.10	.08
TOT L & M	1.01	.87
LARK FILTER	.30	.26
LARK 100	.15	.14
LARK II	.00	.00
LARK LIGHTS 85	.01	.01
LARK LIGHTS 100	.01	.01
TOT LARK	.48	.41
OMNI MENTHOL 100	.00	.00
TOT OMNI	.00	.00
ST MORITZ FIL 100	.00	.00
ST MORITZ MEN 100	.00	.00
TOT ST MORITZ	.00	.00
GENERIC(LIG)LTS	.03	.34
GENERIC(LIG)LTS M	.00	.04
GENERIC(LIG)LTS 100	.00	.06
GENERIC(LIG)LTS M100	.00	.01
TOT GENERIC(LIG)	.04	.46
VELLO FILTER	.00	.00
VELLO MENTHOL	.00	.00
TOT VELLO	.00	.00
L & M MISC	.01	.01
ALL OTHER L&M	.01	.01

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TOTAL US
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YEARS

NAME	YEAR 1980 SOM	YEAR 1981 SOM
TOT L & M CIGT.	2.33	2.55
BISTRO LIGHT FILTER	.00	.00
BISTRO LIGHT MENTHOL	.00	.00
TOT BISTRO	.00	.00
GOLDEN LIGHTS FIL 85	.86	.69
GOLDEN LIGHTS MEN 85	.07	.06
GOLDEN LIGHTS F 100	.69	.62
GOLDEN LIGHTS M 100	.17	.14
TOT GOLDEN LIGHTS	1.79	1.51
KENT 85	1.22	1.09
KENT 85 BOX	.04	.03
KENT FILTER 100	.70	.63
KENT MENTHOL 100	.02	.02
KENT III 85	.77	.64
KENT III 100	.49	.52
TOT KENT	3.24	2.94
HERITAGE 85	.00	.00
HERITAGE 100	.00	.00
TOT HERITAGE	.00	.00
REBEL 85	.00	.00
REBEL 100	.00	.00
TOT REBEL	.00	.00
MAX FILTER 120	.10	.09
MAX MENTHOL 120	.05	.05
MAX SLIM LT F 100 BX	.00	.00
MAX SLIM LT M 100 BX	.00	.00
TOT MAX	.15	.14
MAVERICK FILTER 85	.00	.00
MAVERICK FILTER 100	.00	.00
TOT MAVERICK	.00	.00
NEWPORT 85	1.00	1.12
NEWPORT BOX	.46	.53
NEWPORT 100	.18	.22
NEWPORT LIGHTS 85	.20	.21
NEWPORT LIGHTS 85 BX	.02	.04
NEWPORT NON-MEN SP	.00	.03
NEWPORT NON-MEN BOX	.00	.02
NEWPORT LIGHTS 100	.00	.02
TOT NEWPORT	1.86	2.21
OLD GOLD REGULAR	.00	.00
OLD GOLD KING	.02	.01

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TOTAL US
SOM
YEARS

	YEAR 1980	YEAR 1981
NAME	SOM	SOM
OLD GOLD FILTER 85	.26	.23
OLD GOLD FILTER 100	.05	.04
OLD GOLD BOX	.00	.00
OLD GOLD LIGHTS	.06	.06
TOT OLD GOLD	.39	.35
SPRING MENTHOL 100	.02	.01
TOT SPRING	.02	.01
TRUE FILTER 85	.73	.62
TRUE MENTHOL 85	.35	.30
TRUE FILTER 100	.44	.41
TRUE MENTHOL 100	.24	.22
TRUE ULTRA ONE	.00	.00
TOT TRUE	1.77	1.55
TRIUMPH FILTER 85	.28	.16
TRIUMPH MENTHOL 85	.12	.07
TRIUMPH FILTER 100	.00	.07
TRIUMPH MENTHOL 100	.00	.05
TOT TRIUMPH	.40	.35
ASPEN 85	.00	.00
ASPEN 100	.00	.00
TOT ASPEN	.00	.00
P LORILLARD MISC	.00	.00
ALL OTHER P LOR	.00	.00
TOT P LOR CIGT.	9.63	9.05
ALPINE MENTHOL 85	.07	.06
TOT ALPINE	.07	.06
HI LIGHT 100 BOX	.00	.00
TOT HI LIGHT	.00	.00
NORTHWINDS MEN 85	.00	.00
NORTHWINDS MEN 100	.00	.00
TOT NORTHWINDS	.00	.01
B & H REGULAR BOX	.00	.00
B & H FILTER 100	1.37	1.29
B & H MENTHOL 100	1.09	1.10
B & H FIL 100 BOX	.16	.15
B & H MEN 100 BOX	.11	.10
B & H KING BOX	.02	.01
B & H LTS F 100	.92	.95
B & H LTS F 100 BOX	.00	.00
B & H LTS M 100	.80	.85
B & H LTS M 100 BOX	.00	.00

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DATE:   4/19/1982                                 TOTAL US
        2/82                                        SOM
                                                   YEARS
                                             ---------------

                                 YEAR  1980              YEAR  1981
                               --------------          --------------
        NAME                        SOM                     SOM
 --------------------          --------------          --------------

 B&H DELUX ULTS F100B                   .00                     .00
 B&H DELUX ULTS M100B                   .00                     .00
    TOT B & H                          4.47                    4.45
 BENSON HEDGES MULT F                   .13                     .10
 BENSON HEDGES MULT M                   .01                     .01
    TOT MULTIFILTER                     .14                     .11
 ENGLISH OVALS K BOX                    .00                     .00
 ENGLISH OVALS R BOX                    .00                     .00
    TOT ENGLISH OVALS                   .00                     .00
 GALAXY FILTER                          .00                     .00
    TOT GALAXY                          .00                     .00
 MERIT FILTER 85                       2.21                    1.96
 MERIT MENTHOL 85                       .44                     .36
 MERIT FILTER 100                      1.23                    1.23
 MERIT MENTHOL 100                      .33                     .31
 MERIT ULTRA LTS F 85                   .00                     .35
 MERIT ULTRA LTS M 85                   .00                     .17
 MERIT ULT LTS F 100                    .00                     .06
 MERIT ULT LTS M 100                    .00                     .04
    TOT MERIT                          4.22                    4.49
 MARLBORO 85                           5.68                    5.53
 MARLBORO BOX                          5.80                    5.66
 MARLBORO FIL 100                      1.75                    1.78
 MARLBORO FIL 100 BOX                   .68                     .71
 MARLBORO MENTHOL                       .21                     .22
 MARLBORO LIGHTS 85                    2.33                    2.36
 MARLBORO MENTHOL BOX                   .01                     .01
 MARLBORO LIGHTS 100                   1.12                    1.34
 MARLBORO LIGHTS BOX                    .17                     .70
    TOT MARLBORO                      17.76                   18.32
 PARLIAMENT LTS 85                      .37                     .33
 PARLIAMENT LTS BOX                     .38                     .36
 PARLIAMENT LTS 100                     .46                     .44
 PARLIAMENT ULTRA LTS                   .00                     .00
    TOT PARLIAMENT                     1.21                    1.14
 P MORRIS INTER F BOX                   .00                     .00
 P MORRIS INTER M BOX                   .00                     .00
    TOT P.MOR INTER                     .00                     .00
 P MORRIS REGULAR                       .03                     .02
 P MORRIS KING                          .16                     .14
    TOT P MORRIS                        .19                     .16
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DATE: 4/19/1982
2/82

TOTAL US
SOM
YEARS

NAME	YEAR 1980 SOM	YEAR 1981 SOM
SARATOGA FIL 120 BOX	.25	.24
SARATOGA MEN 120 BOX	.12	.12
TOT SARATOGA	.37	.36
V. SLIMS FILTER 100	.68	.67
V. SLIMS MENTHOL 100	.63	.62
V. SLIMS LTS F 100	.00	.00
V. SLIMS LTS M 100	.00	.00
V.SLIMS LTS F 100 BX	.44	.53
V.SLIMS LTS M 100 BX	.54	.66
TOT VA SLIMS	2.30	2.48
BASIC 85	.00	.00
BASIC 100	.00	.00
TOT BASIC	.00	.00
APOLLO-SOYSU	.00	.00
PLAYERS BOX	.00	.00
TOT PLAYERS	.00	.00
CAMBRIDGE 85 SP	.09	.07
CAMBRIDGE 85 BOX	.02	.00
CAMBRIDGE 100	.15	.16
TOT CAMBRIDGE	.26	.23
PHILIP MORRIS MISC	.00	.00
ALL OTHER PM	.00	.00
TOT P MOR CIGT.	30.99	31.83
CAMEL REGULAR	2.28	2.30
CAMEL FILTER	.92	1.12
CAMEL FILTER BOX	.00	.00
CAMEL LIGHTS 85	.83	.97
CAMEL LIGHTS 100	.24	.29
CAMEL LIGHTS HP	.05	.12
TOT CAMEL	4.32	4.79
DORAL FILTER	.18	.00
DORAL MENTHOL	.11	.00
DORAL II FILTER	.15	.16
DORAL II MENTHOL	.10	.12
TOT DORAL	.54	.28
MORE FILTER 120	.64	.67
MORE MENTHOL 120	.51	.54
MORE LTS FIL 100 BOX	.00	.15
MORE LTS MEN 100 BOX	.00	.13
TOT MORE	1.15	1.49
NOW FILTER BOX	.04	.01

DATE: 4/19/1982
2/82

TOTAL US
SOM
YEARS

NAME	YEAR 1980 SOM	YEAR 1981 SOM
NOW MENTHOL BOX	.01	.00
NOW FILTER SP	.26	.22
NOW MENTHOL SP	.13	.11
NOW FILTER 100	.18	.19
NOW MENTHOL 100	.12	.13
NOW 100 BOX	.00	.00
TOT NOW	.74	.67
SALEM 85	2.80	2.67
SALEM 100	1.73	1.69
SALEM BOX	.07	.00
SALEM LIGHTS 85	2.23	2.23
SALEM LIGHTS 100	1.53	1.56
SALEM ULTRA LTS 85	.16	.21
SALEM ULTRA LTS 100	.21	.41
SALEM SLIM LTS100 BX	.00	.03
TOT SALEM	8.73	8.79
TEMPO	.00	.00
TOT TEMPO	.00	.00
VANTAGE FILTER	1.86	1.80
VANTAGE MENTHOL	.46	.44
VANTAGE 100	.76	.76
VANTAGE ULT LTS 85	.38	.34
VANTAGE ULT LTS 100	.38	.39
TOT VANTAGE	3.83	3.73
WINSTON 85	6.94	6.63
WINSTON BOX	.43	.42
WINSTON 100	2.21	2.20
WINSTON MENTHOL 100	.07	.00
WINSTON LIGHTS 85	2.35	2.27
WINSTON LIGHTS 100	1.20	1.24
WINSTON ULT LTS 85	.04	.20
WINSTON ULT LTS 100	.04	.34
WINSTON INTER BOX	.00	.00
TOT WINSTON	13.26	13.32
DAWN FILTER 120	.00	.00
TOT DAWN	.00	.00
REAL FILTER	.10	.00
REAL MENTHOL	.03	.00
TOT REAL	.13	.00
BROOKWOOD FILTER	.00	.00
TOT BROOKWOOD	.00	.00
TOT RJR CIGT.	32.70	33.07
MISC COMPANIES	.02	.02
TOT MISC COMP	.02	.02
TOT OTHERS	.02	.02
TOT INDUSTRY	100.00	100.00

Exhibit C

ACTIVE RJR INTERNATIONAL MARKETS

	Warning Required on		
Market	Pack	Advertising	Comments
WESTERN EUROPE			
Andorra	No	No	
Austria	No	No	
Belgium	Yes	Yes	
Canary Islands	No	No	
Denmark	No	No	
Finland	Yes	*	* Advertising banned.
France	Yes	No	Certain media banned. Copy is restricted.
Germany (West)	Yes	Yes	
Greece	No	No	Certain media banned
Iceland	No	*	* Advertising banned.
Ireland	Yes	Yes	
Italy	No	*	* Advertising banned by law.
Luxembourg	No	No	
Malta	No	No	Certain media banned.
Netherlands	Yes	No	Certain media banned,
Norway	Yes	*	* Advertising banned.
Portugal	No	Yes	
Spain	No	No	
Sweden	Yes	Yes	
Switzerland	Yes	No	Certain media banned. Some other voluntary restrictions.
United Kingdom	Yes**	Yes**	** Warnings by voluntary agreement but not law.
EASTERN EUROPE			
Bulgaria	No	*	* Media advertising banned.
Czechoslovakia	No	*	* Advertising "unofficially" banned.
Germany (East)	No	*	* Advertising banned.
Hungary	Yes	*	* Media advertising banned.
Poland	No	*	* Advertising banned
Romania	No	*	* Advertising banned.
Yugoslavia	No	*	* Media advertising banned.
MIDDLE EAST (Inland)			
Bahrain	Yes	Yes	
Kuwait	Yes	*	* Most advertising banned.
UAE	Yes	Yes	
Iraq	Yes	*	* Most advertising banned.
Lebanon	Yes	Yes	
Oman	Yes	No	Certain media banned.
Qatar	No	No	Certain media banned
Saudi Arabia	Yes	*	* Advertising banned.
OTHER MIDDLE EAST			
Cyprus	Yes	Yes	

Market	Warning Required on Pack	Warning Required on Advertising	Comments
AFRICA			
Algeria	No	No	Certain media banned.
Dahomey (Benin)	No	No	
Egypt	Yes	Yes	
Ethiopia	No	No	
Ivory Coast	No	No	
Liberia	No	No	
Libya	Yes	No	
Mauritania	No	No	
Morocco	No	No	Certain media banned.
Senegal	No	No	Advertising will be banned 11/82.
South Africa	No	No	T&N will be required on packs in 1982 but no warning required.
Togo	No	No	
Tunisia	No	*	* Advertising banned.
NORTH AMERICA			
Puerto Rico	Yes	Yes	
Canada	Yes	Yes	
Mexico	Yes	No	
CENTRAL/SOUTH AMERICA			
Argentina	No	No	
Belize	No	No	
Brazil	No	No	
Ecuador	Yes	Yes	
Paraguay	No	No	
Peru	Yes	Yes	
Venezuela	Yes	Yes	
WEST INDIES			
Bahamas	Yes	Yes	
Barbados	No	No	
Bermuda	No	No	
Cayman Islands	No	No	
Leward-Windward Is.	No	No	
Netherland Antilles	No	No	
U.S. Virgin Islands	Yes	Yes	U.S. Law applies.

Market	Warning Required on		Comments
	Pack	Advertising	
PACIFIC ISLANDS			
American Samoa	Yes	Yes	U.S. Law applies
French Pacific Islands	Yes**	*	** Pack warning effective 12/82. *Adv. banned now except for existing contracts. Total ban 12/82.
Pacific Trust Territory	NA	NA	Part of Micronesia
Guam	Yes	Yes	U.S. Law applies
Micronesia	No	No	
COMMUNIST ASIA			
China	No	No	Advertising generally banned except in limited cases.
EASTERN ASIA			
Australia	Yes	No*	* Warning required by voluntary agreement where pack included in ad
Hong Kong	No	No	
Japan	Yes	Yes	
Malaysia	Yes	Yes	
New Zealand	Yes	Yes	
Philippines	No	No	
Singapore	Yes	*	* Advertising banned.

Congress of the United States
House of Representatives
Subcommittee on Health and the Environment
of the
Committee on Energy and Commerce
Washington, D.C. 20515

May 12, 1982

Samuel B. Witt, III
Vice President
R.J. Reynolds Tobacco Company
Winston-Salem, North Carolina 27102

Dear Mr. Witt:

I have received your letter of April 29, 1982 responding to the Subcommittee's request for information to supplement the testimony of Mr. Edward Horrigan, Jr. on March 12, 1982.

During public testimony before the Subcommittee on March 12, 1982 I requested an opinion on the effect of repeal of the Federal Cigarette Labeling and Advertising Act. Specifically, I inquired if a repeal of that Act would obligate the R. J. Reynolds Tobacco Company under product liability law to adequately warn consumers of the risks cigarette use might pose to their health. You indicated that if allowed additional time you would be pleased to respond to this question. Despite that assurance, you did not respond to the question.

If the Subcommittee is to properly evaluate the effect of pending legislation and the testimony of individuals concerning such legislation, it must have the cooperation of individuals to whom it directs requests for information. Failure to supply the information agreed to not only makes it impossible for this Subcommittee to do its job, but is also an affront to the Members of the Subcommittee.

In addition, your unwillingness to respond to questions 8 - 10 of the Subcommittee's request concerning the production process and costs of cigarette advertising is disappointing. I regret that you could not be more responsive to the Subcommittee's inquiry.

The Subcommittee's request for information, your April 29th response and this letter will be made a permanent part of the hearing record on H.R. 5653, the "Comprehensive Smoking Prevention Education Act of 1982."

Sincerely,

HENRY A. WAXMAN
Chairman, Subcommittee on
Health and the Environment

Mr. **Waxman.** Our next panel of witnesses are Hans J. Eysenck, Institute of Psychiatry in London; Theodore Blau, a psychologist from Tampa, Fla.; Yoram Wind, professor of marketing, the Wharton School of Finance and Commerce, Philadelphia; and Roger D. Blackwell, professor of marketing, Ohio State University.

We are pleased to welcome you to our hearing today. We have your complete statements and they will be made a part of the record in full. I know the statements are quite lengthy. I also understand that you have been informed that we would like you to summarize your statements. We would like you to keep it to as close to 5 minutes as possible so we will have an opportunity for questions and answers.

Dr. Eysenck, why do we not start with you, sir.

STATEMENTS OF HANS J. EYSENCK, PH. D., D. SC., PROFESSOR OF PSYCHOLOGY, INSTITUTE OF PSYCHIATRY, UNIVERSITY OF LONDON; YORAM J. WIND, PROFESSOR OF MARKETING, WHARTON SCHOOL, UNIVERSITY OF PENNSYLVANIA; ROGER D. BLACKWELL, PROFESSOR OF MARKETING, OHIO STATE UNIVERSITY; AND THEODORE H. BLAU, PH. D., PENNSYLVANIA STATE UNIVERSITY

Dr. **Eysenck.** I am Hans J. Eysenck, professor of psychology at the Institute of Psychiatry, University of London and psychologist to the Maudsley and Bethlem Royal hospitals in London.

I received my Ph. D. in 1940 and my D. Sc. in 1964, both from the University of London. I was senior research psychologist at Mill Hill Emergency Hospital from 1942 through 1946. In 1949 and 1950 I was a visiting professor at the University of Pennsylvania in Philadelphia.

Between 1950 and 1954, I was a reader in psychology at the University of London's Institute of Psychiatry. In 1954 I was a visiting professor at the University of California at Berkeley.

I am a fellow of both the British Psychological Society and of the American Psychological Association.

I have founded and edited three psychological journals, and I am on the editorial boards of some 15 other international psychological journals. I have written or edited for publication approximately 35 technical books and over 600 articles dealing with various aspects of the psychological field, particularly with respect to personality, intelligence, behavior therapy, and behavioral genetics.

I have conducted research in the area of smoking for over 20 years and have authored two books, the most recent of which is entitled "The Causes and Effects of Smoking," as well as numerous articles on this subject.

I will not read my whole statement, of course, as you said, but just make a few major points.

A widely accepted theory asserts that cigarette smoking causes lung cancer, coronary heart disease, and many other diseases with which it is statistically linked. It is not always realized that (a) such a theory is far from proven, and is beset by many anomalies and doubts, and that (b) there is an alternative theory which is based on undeniable facts which are not explained by the causal theory.

The present position seems to be that either theory may explain the tragic incidence of lung cancer and coronary heart disease—to which this brief account will be restricted—or that both may be needed to complement each other.

One important point I want to make concerns the isolation of smoking from other correlated habits such as drinking, living it up, staying out late, wenching, et cetera; that is to say a certain style of life, the totality of which may increase the rate of living so that smokers are biologically older than nonsmokers at a given age, for reasons only partly involved with smoking.

Nonsmokers are different types of persons from smokers, are generally more self-protective, and the personality traits and habits thus linked with nonsmoking may be more relevant to the longevity of nonsmokers than their refusal to smoke.

The most impressive evidence for the causal theory has been the report that physicians who gave up smoking showed less lung cancer than members of the general public who continued to smoke. Thus, it might appear that giving up smoking has saved the lives of those who did so.

But this proof is only acceptable if those who continue to smoke, and those who later on give up smoking, are essentially identical with respect to their health before some of them gave up smoking. Clearly, if those who later on give up smoking are already much healthier than those who later on continue to smoke, then the final differences in health may be due to the already existing differences before anyone gave up smoking, rather than to the cessation of this habit.

But there is good evidence to show that smokers and ex-smokers already differed with respect to their health record before the ex-smokers gave up smoking. Similarly, there is evidence that from the point of view of personality and genetics, ex-smokers are different from continuing smokers. Thus this alleged proof is based on an erroneous assumption.

These objections to the causal theory, and others made in my book, do not prove the theory to be wrong; they simply argue that it is still only a theory, not a scientific law. More convincing proof is required before the theory can be accorded a more advanced status. But further than that, there are numerous facts suggesting an alternative theory, and these facts cannot easily be integrated with the causal theory.

Yet a proper theory demands that attention be paid to all relevant facts, and thus again the causal theory is found wanting.

The alternative theory, first suggested by the eminent geneticist and statistician, Sir Ronald Fisher, suggests that genetic factors are important in causing lung cancer; that genetic factors are active in causing people to maintain the smoking habit; and that possibly the same genetic factors may be involved in both these trends, thus producing the observed correlation between smoking and cancer—insofar as such a correlation is real.

There is evidence that genetic factors do play a part in the causation of lung cancer; this is not in doubt. I have brought forward evidence to show that genetic factors are relevant to the maintenance of the smoking habit. Thus there is evidence for both the assumptions on which Fisher's argument was based.

The origin of the smoking habit, on the other hand, is hardly at all influenced by genetic factors. It appears from our genetic analysis and from the direct study of the problem by Professor Spielberger that the origin of the smoking habit is due to peer pressure; parental influences play a much smaller part, and advertising almost none.

My own contribution has been to suggest that the mediating factor between cancer and smoking may be the personality of the people involved. Thus it is assumed that people of a certain personality are more likely than others to die of lung cancer irrespective of smoking. It is also assumed that people of a certain personality are more likely to smoke than others.

There is direct evidence for both these propositions. My original work with Dr. Kissen, an eminent British oncologist, showed very marked personality differences between lung cancer patients and patients suffering from nonmalignant tumors, with the personality assessment made before diagnosis. Since then, a large-scale study in East Germany has replicated our findings. Other studies, also indicating a relation between lung cancer and personality, are cited in my book.

In a similar way, my early work with Tarrant and Woolf established a correlation between personality and smoking, and many studies in different countries have since confirmed our findings, and added new ones. We may thus say that the fundamental assumption of Fisher's genetic theory have found empirical support, and we may add that there is also some modest support for my own attempt to integrate these two major fields.

Unfortunately, there has been too little work along these unusual and somewhat unorthodox lines to say that the results are anything more than suggestive, and the theory linking them is still in a very elementary stage; nevertheless, as far as the findings go they support the genetic rather than the causal theory, although they do not necessarily contradict the latter.

Recently some progress has been made on the theoretical development of the genetic hypothesis by linking it with research on stress, in particular the differential effects of chronic and acute stress, and the "inoculation" theory of stress. However, in the absence of large-scale research into the refinements of this theory, and more widespread familiarity with the criticisms of its details, not too much should be claimed for it other than that it presents a viable alternative to the causal theory.

In the case of coronary heart disease as in the case of lung cancer, proof for the causal influence of smoking is still lacking and is by no means as clearcut and decisive as is often alleged. There is evidence in the case of CHD of genetic factors, and there are published correlations with personality; here, too, there appears an important element of stress determining the appearance of coronary heart disease, and stress is intimately linked with personality.

No formal theory of genetic determination of CHD has yet been put forward, but it seems likely that such a theory is needed as an alternative, or perhaps as complementary, to the causal theory for an explanation of the many gaps and anomalies in the latter.

One important function of the genetic theory has been that of explaining the reasons why people smoke, and to link these reasons with their differential personality patterns. Work along these lines has had the important effect of suggesting new and improved ways of teaching people to give up smoking. The causal theory of smoking causing disease has nothing to say on this topic.

Another important function of the genetic theory has been to suggest better designs for research in this complex field; a good example is the use of the discordant twin method by Cederlof, Lundman, and others, that is to say, the investigation of the illness patterns of identical twins of whom one smokes, the other not. If this type of research had been carried out on the large and international scale required, instead of investing in the redundant and scientifically not very valuable replication and correlational studies, we would know far more about the relation between smoking and disease than we do now.

Such studies allow us to look at environmental factors, including those of smoking, while controlling for genetic factors; this is essential if any convincing results are to be achieved.

In summary I would like to state that the causal theory of smoking as being responsible for lung cancer and coronary heart disease, while it has found strong support, is far from being established, and has many gaps, anomalies, and contrary findings to contend with; these are too frequently glossed over and dismissed as unimportant, when in reality they may be found to discredit the causal theory in whole or in part.

An alternative theory, based on genetics and implicating personality factors, is much less well developed, more complex, and at present not too well known to many oncologists; nevertheless there are many well-established facts which suggest that in part if not in whole it can account for the major findings.

At the very least, this alternative theory suggests novel research methodologies which would serve to overcome the difficulties of the older methods and remedy their lack of proper controls. The possibility has also been raised that the two theories may be complementary, rather than opposed to each other; this possibility too should be looked into from the experimental point of view. What is certain is that at the moment no final decision can be made about whether or the degree to which cigarette smoking may cause lung cancer or coronary heart disease, how it interacts with other factors—stress, personality and so on—or how can we best protect the health of our citizens in relation to these diseases.

[Testimony resumes on p. 459.]

[Dr. Eysenck's prepared statement follows:]

Statement of Professor Hans J. Eysenck

I am Hans J. Eysenck, professor of psychology at the Institute of Psychiatry, University of London and psychologist to the Maudsley and Bethlem Royal hospitals in London.

I received my Ph.D. in 1940 and my D.Sc. in 1964, both from the University of London. I was Senior Research Psychologist at Mill Hill Emergency Hospital from 1942 through 1946. In 1949 and 1950 I was a visiting professor at the University of Pennsylvania in Philadelphia. Between 1950 and 1954, I was a Reader in Psychology at the University of London's Institute of Psychiatry. In 1954 I was a visiting professor at the University of California at Berkeley.

I am a Fellow of both the British Psychological Society and of the American Psychological Association.

I have founded and edited three psychological journals, and I am on the editorial boards of some 15 other international psychological journals. I have written or edited for publication approximately 35 technical books and over 600 articles dealing with various aspects of the psychological field, particularly with respect to personality, intelligence, behaviour therapy and behavioural genetics. I have conducted research in the area of smoking for over 20 years and have authored two books, the most recent of which is entitled The Causes and Effects of Smoking, as well as numerous articles on this subject.

A widely accepted theory asserts that cigarette smoking causes lung cancer, coronary heart disease, and many other diseases with which it is statistically linked. It is not always realized that (a) such a theory is far from proven, and is beset by many anomalies and doubts, and that (b) there is an alternative theory which is based on undeniable facts which are not explained by the causal theory. The present position seems to be that either theory may explain the tragic incidence of lung cancer and coronary heart disease (to which this brief account will be restricted), or that both may be needed to complement each other.

There is agreement that smoking is neither a necessary nor a sufficient cause of lung cancer. Of 100 heavy smokers, less than 10 will develop lung cancer; hence smoking is not a sufficient cause. And of 100 people who develop lung cancer, approximately 10 will be non-smokers: hence smoking is not a necessary cause. This simple fact (the precise numbers differ of course from country to country, but indicate the correct order of magnitude) suggests that the scientific proof for any particular theory will be difficult to arrive at, and that any such theory will almost certainly be complex and multi-faceted.

Much of the evidence cited in favour of the causal theory is statistical, but many statisticians have severely criticized the evidence on statistical grounds. Such suggested proofs as the correlation between smoking and lung cancer within a given country, or between lung cancer and number of cigarettes smoked between countries, are evidence of correlation, not of causation; one of the first lessons the budding statistician learns is that correlation does not imply causation. (There is a very high correlation between countries linking meat eating and cancer of the large intestine, yet we do not conclude that eating meat causes cancer of the large intestine!). Hence this method of demonstration, while suggestive, is far from compelling. This would be so even if the figures usually quoted could be taken seriously; however, there are good reasons for doubting their accuracy.

The figures quoted are based on clinical diagnosis of lung cancer, but these are very unreliable and imprecise. If we take as our criterion autopsy data, and compare these with routine diagnosis, we find that prior to World War 1, out of 100 people found on autopsy to have died of lung cancer, only 3 were so diagnosed. This is typical of the very obvious under-diagnosis of lung cancer then prevalent. In recent years, exactly the opposite has been found, namely an over-diagnosis of lung cancer of up to 200% and more! Whether these changes in diagnostic preference are completely responsible for the alleged tremendous increase in lung cancer over the years or not, and whether it may in part account for the observed correlation between lung cancer and smoking, it is impossible to say; all we can say is that with the basic data so completely unreliable, the statistics based on them are suspect.

Another important point concerns the isolation of smoking from other, correlated habits, such as drinking, living it up, staying out late, wenching, etc., i.e. a certain style of life the totality of which may increase the "rate of living", so that smokers are biologically older than non-smokers at a given age, for reasons only partly involved with smoking. Non-smokers are different types of persons from smokers, are generally more self-protective, and the personality traits and habits thus linked with non-smoking may be more relevant to the longevity of non-smokers than their refusal to smoke.

It is often suggested that sex differences, with males showing more lung cancer, are the product of the tendency of males in the past 50 years or so to smoke more. However, as several authorities whom I quote in my book have pointed out, similar sex ratios to those observed now were found before cigarette smoking became popular. Again, it is found that changes in the rate of increase of lung cancer diagnosis occurred simultaneously for men and women, although the women, who took up smoking much later than men, should have shown these changes at a much later date than men.

If the causal theory is true, then we would expect a definite dose-response relationship; in other words, the heavy smoker should be stricken with cancer earlier than the light smoker. Yet the amount smoked makes no appreciable difference to the mean age at which the person is reported first to the clinic. Again, inhalation should make lung cancer much more likely than smoking without inhaling, yet the figures show if anything an opposite trend. These two observations are difficult to reconcile with the causal theory of smoking.

The most impressive evidence for the causal theory has been the report that physicians who gave up smoking showed less lung cancer than members of the general public who continued to smoke. Thus, it might appear that giving up smoking has saved the lives of those who did so. But this proof is only acceptable if those who continue to smoke, and those who later on give up smoking, are essentially identical with respect to their health before some of them gave up smoking. Clearly, if those who later on give up smoking are already much healthier than those who later on continue to smoke, then the final differences in health may be due to the already existing differences before anyone gave up smoking, rather than to the cessation of this habit! But there is good evidence to show that smokers and ex-smokers already differed with respect to their health record before the ex-smokers gave up smoking. Similarly, there is evidence that from the point of view of personality ex-smokers are different from continuing smokers. Thus this alleged proof is based on an erroneous assumption.

These objections to the causal theory, and others made in my book, do not prove the theory to be wrong; they simply argue that it is still only a theory, not a scientific law. More convincing proof is required before the theory can be accorded a more advanced status. But further than that, there are numerous facts suggesting an alternative theory, and these facts cannot easily be integrated with the causal theory. Yet a proper theory demands that attention be paid to all relevant facts, and thus again the causal theory is found wanting.

The alternative theory, first suggested by the eminent geneticist and statistician Sir Ronald Fisher, suggests that genetic factors are important in causing lung cancer; that genetic factors are active in causing people to maintain the smoking habit; and that possibly the same genetic factors may be involved in both these trends, thus producing the observed correlation between smoking and cancer (insofar as such a correlation is real). There is evidence that genetic factors do play a part in the causation of lung cancer; this is not in doubt. I have brought forward evidence (in addition to already very convincing evidence produced by many other people) to show that genetic factors are relevant to the maintenance of the smoking habit. Thus there is evidence for both the assumptions on which Fisher's argument was based.

The origin of the smoking habit, on the other hand, is hardly at all influenced by genetic factors. It appears from our genetic analysis and from the direct study of the problem by Professor Spielberger that the origin of the smoking habit is due to peer pressure; parental influences play a much smaller part, and advertising almost none.

My own contribution has been to suggest that the mediating factor between cancer and smoking may be the personality of the people involved. Thus it is assumed that people of a certain personality are more likely than others to die of lung cancer *irrespective of smoking*. It is also assumed that people of a certain personality are more likely to smoke than others. There is evidence for both these propositions. My original work with Dr. Kissen, an eminent British oncologist, showed very marked personality differences between lung cancer patients and patients suffering from non-malignant tumours, with the personality assessment made before diagnosis. Since then, a large-scale study in East Germany has replicated our findings (themselves replicated in another study by Kissen), and has found similar personality traits to those characteristic of lung cancer patients in women with cancer of the breast. Other studies, also indicating a relation between lung cancer and personality, are cited in my book.

In a similar way, my early work with Tarrant and Woolf established a correlation between personality and smoking, and many studies in different countries have since confirmed our findings, and added new ones. We may thus say that the fundamental assumption of Fisher's genetic theory have found empirical support, and we may add that there is also some modest support for my own attempt to integrate these two major fields. Unfortunately there has been too little work along these unusual and somewhat unorthodox lines to say that the results are anything more than suggestive, and the theory linking them is still in a very elementary stage; nevertheless, as far as the findings go they support the genetic rather than the causal theory, although they do not necessarily contradict the latter. It seems unfortunate that the premature crystallization of spurious orthodoxies has prevented the genetic theory from attracting sufficient research grants to work it out in sufficient detail, and to carry out the research necessary to put it on a more acceptable footing.

Recently some progress has been made on the theoretical development of the genetic hypothesis by linking it with research on stress, in particular the differential effects of chronic and acute stress, and the "inoculation" theory of stress. However, in the absence of large-scale research into the refinements of this theory, and more widespread familiarity with and criticisms of its details, not too much should be claimed for it other than it presents a viable alternative to the causal theory.

In relation to the causal theories of coronary heart disease (CHD), similar criticisms apply as do in the case of lung cancer. There are considerable unreliabilities in diagnosis; there are large numbers of factors other than smoking which have been associated and which are not usually controlled for in studies of the effects of smoking; inhalers do not on the whole differ from non-inhalers in disease proneness; the statistical relation between cigarette smoking and CHD disappears in many countries, e.g. Finland, Holland, Yugoslavia, Italy, Greece and Japan; there is an absence of dose-response relationship, i.e. there is little or no relation between duration of heavy cigarette smoking and risk of myocardial infarction; and the correlation between number of cigarettes smoked and CHD is not linear; ex-smokers in some studies appear to be safer than non-smokers; some types of CHD, such as angina pectoris (which comprises some 20% of CHD in men) fail to show even a statistical correlation with cigarette smoking; some types of smoking (cigar, pipe) fail to show even a statistical correlation with CHD; etc. These are anomalies or failures of the causal theory which demand an explanation before the causal theory can be accepted. Some of these facts are much more readily explained in terms of a genetic-personality theory; thus the differential effects of cigarette vs. pipe/cigar smoking may find an explanation in terms of the known differences in personality type associated with these different smoking patterns.

The general conclusion would seem to be that in the case of CHD, as in the case of lung cancer, proof for the causal influence of smoking is still lacking and is by no means as clear-cut and decisive as is often alleged. There is evidence in the case of CHD of genetic factors, and there are published correlations with personality; here too there appears an important element of stress determining the appearance of CHD, and stress is intimately linked with personality. No formal theory of genetic determination of CHD has yet been put forward, but it seems likely that such a theory is needed as an alternative (or perhaps as complementary) to the causal theory for an explanation of the many gaps and anomalies in the latter.

One important function of the genetic theory has been that of explaining the reasons why people smoke, and to link these reasons with their differential personality patterns. Work along these lines has had the important effect of suggesting new and improved ways of teaching people to give up smoking. The causal theory of smoking causing disease has nothing to say on this topic. Another important function of the genetic theory has been to suggest better designs for research in this complex field; a good example is the use of the discordant twin method by Cederlof, Lundman and others, i.e. the investigation of the illness patterns of identical twins of whom one smokes, the other not. If this type of research had been carried out on the large and international scale required, instead of investing in the redundant and

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scientifically not very valuable replication of correlational studies, we would know far more about the relation between smoking and disease than we do now. Such studies allow us to look at environmental factors, including those of smoking, while controlling for genetic factors; this is essential if any convincing results are to be achieved.

In summary I would like to state that the causal theory of smoking as being responsible for lung cancer and coronary heart disease, while it has found strong support, is far from being established, and has many gaps, anomalies and contrary findings to contend with; these are too frequently glossed over and dismissed as unimportant, when in reality they may be found to discredit the causal theory in whole or in part. An alternative theory, based on genetics and implicating personality factors, is much less well developed, more complex, and at present not too well known to oncologists; nevertheless there are many well-established facts which suggest that in part if not in whole it can account for the major findings. At the very least, this alternative theory suggests novel research methodologies which would serve to overcome the difficulties of the older methods and remedy their lack of proper controls. The possibility has also been raised that the two theories may be complementary, rather than opposed to each other; this possibility too should be looked into from the experimental point of view. What is certain is that at the moment no final decision can be made about whether or the degree to which cigarette smoking may cause lung cancer or coronary heart disease, how it interacts with other factors (stress; personality), or how we can best protect the health of our citizens in relation to these diseases. "In ignorance, abstain!" warned the famous French scientist, Claude Bernard; hasty action on the basis of partial knowledge is unlikely to be in the best interests of those most concerned, namely the prospective victims of lung cancer and coronary heart disease.

Mr. **Waxman**. Thank you very much, Dr. Eysenck.
Dr. Wind.

STATEMENT OF YORAM J. WIND

Mr. **Wind**. Thank you. I am Yoram Wind. Since 1973 I have been a professor of marketing at the Wharton School. I am the previous editor of the Journal of Marketing. I have been at Wharton since receiving my doctorate from Stanford in 1967.

My specialty is marketing research, including consumer behavior. Over the years I have consulted to numerous companies and published extensively in various areas of marketing and consumer behavior.

I have been asked by the Tobacco Institute to present my views as an expert in marketing and consumer behavior on the theoretical and factual support for certain of the provisions in the bill. I am appearing here today not only as an expert but also as an ex-smoker. And I can understand, therefore, the motivation underlying the bill.

Yet, I find the proposed labeling requirement to be conceptually unacceptable and empirically unsupported. The proposed bill suffers from two major problems which if we will use a medical analogy, can be viewed as, one, analyzing or giving the wrong diagnosis. The bill is premised on the notion that consumers are not aware of the relations between smoking and health issues. It seems to me based on the evidence we have, including FTC's staff report and other studies as discussed earlier today, that there is ample evidence to suggest that there is extremely high awareness of the problem.

The second problem is that even if we assume for a minute that the diagnosis is correct, that there is a lack of awareness, there is no conceptual nor empirical support to suggest that the labeling requirement will have any effect on achieving the objective of the bill.

These are the two major problems that I will try to address myself to. Concerning the first point on the current high level of awareness, it as quite evident from my written statement and the earlier statements today, that there is enough evidence to suggest there is a very high level of awareness of the relation between smoking and health problems.

The FTC report cites the 1978 Gallop survey which indicates over 90 percent of the public believes smoking is hazardous to health. A similar high percentage responds affirmatively to more specific issues in many of the studies that were conducted.

For example, 90 percent believe smoking during pregnancy can affect the smoker's baby, 87 percent of adults are of the view smoking has been found to be associated with cancer and so on. The responses at this high level are truly remarkable. A measured awareness of 90 percent can be considered deficiency only if one takes as a standard against it perfect information of 100 percent.

This is totally unattainable, it is conceptually unreachable. It is impossible. Human cognitive abilities, differences among people, selective perceptions, will never allow us to get on any issue, 100 percent awareness. There are numerous studies, some of them cited in my statement, that suggest on other issues, more critical issues, you never get such high response rates.

The FTC staff report, on which I believe some of the proposed bill is based, also misinterprets a fair amount of the data that it suggests as basis for its conclusions. There are basically six major problems with the staff report.

First, the staff improperly focuses on responses to specific questions. It establishes whether the population knows or does not know a certain fact based on a response to a single item. It is contrary to everything that we know about measurement theory.

No test is based on a single item. You are working on pattern of responses, yet all of the studies focused on a specific question. Can you measure your knowledge of economic, psychology, human behavior, any area based on a single question?

Second, the staff assumed that anyone that responded incorrectly to one out of a number of multiple response options basically did not know the answer. Imagine a telephone situation when you are being interviewed, you are given like 5 different options and if you miss the one correct answer you are classified now as basically providing the wrong answer.

Similarly, the staff interprets "do not know" in a quite erroneous manner. Basically their definition of do not know is anyone who missed the correct answer. But there might be another interpretation.

Mark Twain in "Life on the Mississippi" said, "I was gratified to be able to answer promptly, and I did. I said I didn't know."

Recognizing this specific problem, the Research Center at the University of Michigan for example points out that the answer "I have no opinion on that" can mean merely, I am thinking, and advises that it is a good idea to probe all of the "do not know" responses. No probing was done in any of the studies that I reviewed.

The third problem is that incorrect responses can be attributed to lack of understanding of the specific question, or the options provided. If you will examine fully some of the questionnaires that are the basis for the studies, you will see that it is extremely difficult to answer them. I urge you to try to be a respondent and try to answer them.

The fourth problem relates to two very basic issues. None of the studies on the relation between consumer awareness of smoking and health issues focused on either the basic questions of the reliability of the data, or validity of the data. Those are two critical components in any measurement; if we are trying to generalize from the findings to the general population.

Fifth, the staff report does not present a norm against which to compare several results. Without a norm, given the fact we ruled out before the possibility of 100 percent awareness as an acceptable or even attainable objective, we can never know what does the number mean. Is it high, low, medium? There are no norms provided. Yet in any educational testing, or any other testing situation we always have to have norms for comparison.

Six, and most fundamentally, the report's conclusions are based to a large extent on confusion between the terms awareness, belief, and knowledge. And let me quote here the staff definition of awareness. I think it is very illuminating. Their definition is, and I quote: "Those who say they do not believe, do not believe true statements. Believe false statements. Underestimate on a multiple choice question or answer 'do not know' or 'uncertain.'" This suggests a major confusion between belief and awareness.

If I take positions of belief as statement of unawareness, I am getting a complete confusion that invalidates all the information provided in terms of percentage of people who are unaware.

There are a number of examples I can quote, you have them in my statement and I will not go into them now, but you might want to refer to them or go back to the original staff reports.

These six problems suggest to me quite conclusively that the diagnosis on which the bill is based, that there is no high awareness as to the relation between cigarette smoking and health hazard is incorrect. It seems to me that there is a very high one.

The second point that I have is the fact that the warning system suggested will not help us achieve the objective. There is no way, no conceptual way that can support the rotational system as a way of achieving the objective of the bill. The only basis, empirical basis, this that I am familiar with is a study done by Burke that has four major problems.

One, the study restricted the warning statements only to cigarette advertising, ignored completely the package labeling. Did not test them at all.

Two, the sample was a nonrepresentative sample based on selecting people in malls as opposed to trying to have a random probability sample that would have allowed us to generalize the results to the population at large.

Three, the study included only two of the warnings you are considering today. Even then, worded differently.

There is no defensible empirical basis to suggest that any of the proposed labels makes any sense, that they will achieve their objective.

Four, when you look at the results, even with all these limitations, and if you control for the format—they tested in their study four different formats and three messages—there is no significant difference between the awareness of the message based on the current one, and their proposed ones, which basically suggests that, even if you forget all the problems of the study, their data really do not support the conclusions that the committee is suggesting here.

In conclusion then, it seems to me that, one, the basis on which the bill is based, the notion that we are in a situation as stated by the committee, that the consumers are unaware of the dangers of smoking is incorrect and unsupported by fact.

Two, the hope that a prescription to replace the current Surgeon General's warning with a rotational system of seven different warnings will have any positive effect on consumer awareness about smoking and health issue is really speculative. We do not have any support for this either conceptually or empirically.

I urge the committee therefore to reconsider the advisibility of the labeling provisions and I will be happy to answer any questions you might have.

[Testimony resumes on p. 474.]

[Mr. Wind's prepared statement follows:]

STATEMENT OF PROFESSOR YORAM J. WIND FOR SUBMISSON TO THE SUBCOMMITTEE ON HEALTH AND THE ENVIRONMENT

I am Yoram (Jerry) Wind. Since 1973 I have served as Professor of Marketing at the Wharton School of the University of Pennsylvania, and am the past editor of the Journal of Marketing. I have been on the faculty at Wharton since receiving my doctorate degree from Stanford University in 1967. My specialty is marketing research, with particular emphasis on the analysis and measurement of consumer behavior. During the past fifteen years I have served as a research consultant for various government agencies and about 100 companies and have published extensively in many areas of marketing. A resume of my educational background and professional activities, and a bibliography of my publications, are attached to this statement.

I have been asked by The Tobacco Institute to present my views, as an expert in marketing and consumer behavior, on the theoretical and factual support for certain of the provisions of H.R. 5653. My testimony will deal with the proposed findings that existing government and private programs, including the Surgeon General's warning statement, have not adequately informed the public about smoking and health issues, and the proposal to replace the current warning statement with a rotational system of seven different warning statements. My comments are based on an evaluation of a document issued in May 1981 by the Staff of the Federal Trade Commission entitled Report on the Cigarette Advertising Investigation, which I understand was submitted to Congress and was based on a rationale that appears to be similar to that underlying the labeling provisions of the present bill. I also have reviewed the consumer studies and surveys that are principally relied upon in that Report.

My conclusion can be stated in one sentence: to the extent that the labeling and advertising proposals contained in H.R. 5653 are based on the recommendations and conclusions set forth in the FTC Staff Report, those proposals are without factual or theoretical support and are unlikely to achieve the bill's objective.

I base that conclusion on two key points:

First, the level of public awareness about various smoking and health issues, as demonstrated by the studies and surveys cited in the FTC Staff Report, is extraordinarily high -- much higher than one would expect to result from normal advertising and marketing methods. The efforts of the FTC Staff to minimize the extent of public awareness on these issues are based on misinterpretation and misuse of the studies cited in the Report and a fundamental confusion between awareness and belief. The conclusion presented in the proposed bill that "present Federal, State, and private initiatives have been insufficient in conveying the health messages to the American Public" (Sec. 2(7)), is not consistent with the findings of the studies relied upon by the FTC Staff Report.

Second, there is neither theoretical nor empirical support for the proposition that the rotational warning system proposed in H.R. 5653 and recommended by the FTC Staff would have any positive impact on the level of public awareness about smoking and health issues. Replacement of the current warning statement with seven different rotational warnings thus would be totally arbitrary.

I would like to elaborate on each of these points.

I.

With respect to the existing level of public awareness, the FTC Report begins its analysis with the admission that "most people are generally aware" of the claims about smoking and health. The report cites a 1978 Gallup Opinion poll, which indicates that more than 90 percent of the public believes that smoking is hazardous to health. Similar high percentages respond affirmatively to more specific issues: over 90 percent of the public believes that heart disease has been found to be associated with smoking; almost 90 percent believes that smoking during pregnancy can affect the smoker's baby; 87 percent of adults are of the view that smoking has been found to be associated with cancer of the mouth and with chronic bronchitis; well over 80 percent either "think" or "know" that smokers are many more times as likely to develop lung cancer as nonsmokers.

These responses are remarkable. National surveys and polls consistently identify substantial segments of the American public who are unaware of major public issues and facts -- the energy crisis, the identity of the President and other public leaders -- the examples are numerous.

A measured level of 90 percent awareness can be considered "deficient" only if it is compared to a standard of perfect awareness. But it should be obvious that such a standard is both theoretically and practically impossible. The limits of human cognitive abilities and selective perception mechanisms insure that 100 percent of any group will never be aware of or in agreement about any fact or issue. That is why there is a distribution of responses in any test, particularly a test involving multiple choice questions such as the studies cited in the FTC Staff Report.

An equally important defect is the FTC Staff's fundamental misinterpretation of the results of the consumer studies on which it relies. Six major misinterpretations can be identified.

First, the Staff improperly focussed on responses to specific questions, rather than on patterns of responses. The Staff assumed throughout its discussion of public awareness that if a number of people are not aware of a specific detail about the smoking and health issue -- for example, the claim that smoking during pregnancy increases the risk of still birth and miscarriage -- those people are not aware of the general proposition that encompasses that detail -- that is, the assertion that smoking during pregnancy increases the risks of adverse effects on the baby.

This assumption is contrary to the actual results of the studies cited in the report, which show that most people are aware of all of the significant claims about smoking and health. It also violates fundamental principles about measurement of knowledge or awareness, which call for the development of an overall knowledge score or scores based on response to multiple items. Can your knowledge of a subject, let's say economics, politics or health, be assessed accurately by your response to a single question on each topic? Yet this is analogous to the FTC Staff's reliance on the response to a single question on the health effects of smoking.

The second area of misinterpretation is the Staff's assumption that anyone who responds incorrectly to multiple choice questions involving detailed statistics or medical knowledge is insufficiently aware of the fact or issue involved in the question. Respondents were asked numerous questions involving precise details, such as "Out of every hundred people who get lung cancer, how many die from it," and were provided with six alternative answers. According to the Staff, anyone who picked other than the answer that the Staff called correct -- 95 -- "did not appreciate the severity of lung cancer." In fact, however, the vast majority of respondents chose either 45, 75, or 95, indicating that they believe that lung cancer has a high mortality rate of at least 1 of every 2 of those suffering from the disease. That belief hardly supports the Staff's conclusion.

Similarly, the Staff interpreted "don't know" answers to such questions as a lack of awareness on the part of the respondent. But such an answer is equally susceptible to the interpretation that the respondent is aware of the statement presented but is unsure of the precise statistics involved. In my previous example, a person who believed that most people with lung cancer die from that disease, but who was not sure whether the correct proportion is 85, 90, 95, or 97 out of 100, might answer "don't know." The Report would erroneously have included that person in the category of those who "do not appreciate the severity of lung cancer."

Still another interpretation of the "don't know" answer is the one offered by Mark Twain in Life on the Mississippi: "I was gratified to be able to answer promptly, and I did. I said I didn't know." Recognizing this, the Interviewer's Manual of the Survey Research Center of the University of Michigan points out that the answer "I have no opinion on that" can mean merely "wait a minute, I am thinking" and advises that it is a good idea to probe all "don't know" responses. No probing was conducted in the studies relied upon by the FTC Staff.

Third, many of the so-called "incorrect" responses to the studies could have resulted from simple lack of understanding of the questions. The studies primarily relied upon in the Report on the issue of public awareness were based on telephone surveys. In such interviews, it is not reasonable to expect a high percentage of correct answers to complex questions such as those that were asked in the studies.

Let me give you an example of one such question. Imagine that I have called you out of the blue, explained who I am, and ask you a long series of questions. Even if you have remained interested and alert throughout the interview, you must respond to such questions as this one:

"How many Americans living today will eventually die from diseases related to smoking cigarettes? None, one out of two, one out of six, one out of ten, or one out of a hundred?"

The ambiguity of the phrasing -- does the word "Americans" refer to all Americans or only those who smoke? -- as well as the precise statistical answers presented turn such surveys into a guessing game rather than a test of knowledge or awareness.

Fourth, none of the studies cited in the Report included supporting data as to the reliability and validity of their findings. That is, no evidence was offered to show that the series of questions asked were a reliable measure of public awareness or knowledge about any particular issue. For example, how many respondents would provide the same answers if they were reinterviewed a few weeks later? Furthermore, no validation of the results was provided. Indeed, given the focus of the FTC Staff Report on substantive conclusions, if it were submitted to a professional publication such as the

Journal of Marketing during my editorship, or Marketing Science today, it would be rejected due to the lack of any validation procedures for the studies upon which its conclusions are based.

Fifth, neither the Staff Report nor the studies presented any norm against which to compare the survey results. In the classic text on testing, Educational Measurement, William Angoff of the Educational Testing Service states:

> "By now it has become almost axiomatic that raw scores on a test yield no meaning unless they are accompanied by relevant supplementary data that will place the score in an appropriate interpretive context."

In other words, it is impossible validly to conclude that the answers to a particular survey item represents a high, low or medium level of awareness in the absence of a standard that would show what answers are to be expected.

Sixth, and most fundamentally, the Report's conclusions, and to a large extent the studies upon which those conclusions are based, reflect a hopeless confusion of the very distinct concepts of awareness versus knowledge and belief. The Staff Report defines "unaware" as:

> ". . . those who say they do not believe true statements ; believe false statements; underestimate on a multiple choice question or answer 'don't know' or uncertain." (FTC Staff Report at p. 17 note b, emphasis added)

There is no conceptual justification for combining these five diverse responses. Belief is not awareness or knowledge; looking for exact response on a multiple choice question in search of the precise "correct" answer is not reasonable, "don't know" is both a function of the question wording and the item of concern; and uncertainty does not necessarily represent lack of awareness.

One example of this faulty definition of "awareness" is the FTC Staff's misuse of the 1980 Roper Study cited in the Report. That study asked people "how true you personally think" a particular statement is. The interviewer was instructed to introduce those questions to the respondents as follows: "Now I'm going to read you some statements about smoking and health, and for each one I'd like you to tell me your beliefs about how true the statement is." Respondents were permitted to answer only "know it's true," "think it's true," "don't know if it's true," "think it's not true," or "know it's not true." The Staff concluded that those responding in the latter three categories are "unaware" of the information conveyed by the specific statements made. It is obvious, however, that a respondent could be aware of a claim (for example, that smoking increases the risk of heart attack) yet disagree with it.

The FTC Staff consistently misused the studies in this respect to support its erroneous conclusions about awareness. Let me read another example from page 3-19 of the Report:

> "According to the Gallup Opinion Index, June, 1978, 19% of the population do not believe that smoking causes lung cancer . . . . Among all smokers, 28% did not believe smoking caused lung cancer while among heavier smokers, nearly one-third -- 31% -- did not believe or

> know about the link. . . . Projected nationwide, these data suggest that tens of millions of Americans, both smokers and non-smokers, do not know that cigarette smoking causes lung cancer."

The Staff's conclusion simply does not follow from the data. This fundamental type of error -- confusing consumer awareness with consumer belief -- undermines any recommendations that might be based on a premise that the public is not adequately informed about smoking and health.

II.

The FTC Staff Report -- and presumably the present bill -- proceed from the premise that the public is inadequately informed about smoking and health issues to the conclusion that a new system of warning statements is necessary to rectify this inadequacy. As I have attempted to demonstrate, the available data do not support the premise. But it is equally disturbing that the new system of warning statements recommended by the Report and by H.R. 5653 are not likely to achieve any positive impact on consumer awareness about smoking and health issues.

There is no evidence that specific warnings such as those proposed in H.R. 5653 would result in any increase in public awareness. The only study of which I am aware that relates to this issue is a study conducted for the FTC Staff by Burke Marketing Research to test the recall of different types of proposed warning statements and formats. This study has three major limitations. One, it is restricted to warning statements in cigarette advertising, not packaging. Two, the sample of respondents is not representative of the American public, and thus the projectability of the study's results is questionable. Three, the study included only two new warning statements and the current statement as a control; the two statements tested are not among those proposed by the present bill.

Given these limitations, it is clear that the study does not provide empirical support for the present proposal. But even were one to assume away the limitations and accept the results of the study as valid, they demonstrate only that consumers best recall those matters that they already had learned from the present warning statement and from the numerous other sources of information about smoking and health. Thus, for example, the study found that a specific lung cancer warning was "no more effective than the non-cancer warnings in eliciting mentions of the relationship between smoking and cancer."

Indeed, it is quite possible that the rotational warnings proposed by H.R. 5653 would have an opposite effect of what is intended by the bill's sponsors. The present Surgeon General's warning statement is embedded in the public consciousness, as well or better known than the proposition that people should wear seat belts. If instead appear statements linking smoking to specific health problems, consumers might well conclude that the Surgeon General has changed his opinion and no longer considers smoking to be generally hazardous to health. Moreover, by focussing on specific problems, the warnings become significantly less relevant to various segments of the population. Teenagers, for example, are unlikely to be concerned about emphysema or heart disease; single men and older women are not likely to pay attention to a warning that smoking may cause problems during pregnancy. Neither the FTC Staff Report nor the present bill appears to have given any consideration to these potential consequences of a rotational warning system.

III.

In conclusion, nothing in the studies cited by the FTC Staff or the rationale suggested in the bill itself supports (a) the diagnosis that the public is unaware of the claimed health hazards of smoking and (b) the prescription that the replacement of the current Surgeon General's warning with a rotational system of seven different warnings will have any positive effect on consumers' awareness about smoking and health issues. The labeling proposals simply are unsupported by facts or theories about consumer behavior. Hence, I urge this Subcommittee to reconsider the advisability of the labeling provisions of H.R. 5653.

Mr. Waxman. Thank you very much. We will have questions in a minute.

Dr. Blackwell.

STATEMENT OF ROGER D. BLACKWELL, PH. D.

Dr. Blackwell. Mr. Chairman, I am Roger Blackwell, a professor of marketing at Ohio State University, specializing in the analysis of buyer behavior and development of marketing strategy. My Ph. D. degree was earned at Northwestern University, with a concentration in consumer behavior.

I have authored, or coauthored, 14 books and over 50 articles published in professional or business journals that report research that I and others have conducted concerning the communications process, consumer decision processes involved in buying and using goods and services, and variables involved in marketing strategy. One of my most recent books is the fourth edition of "Consumer Behavior," published this year.

I have been asked to review section 4 of the bill that would change the present labeling requirements to something else. The rotational system of warnings proposed by section 4 is of course somewhat similar to the report and recommendations made by the staff of the Federal Trade Commission. In my opinion, the change in the warning statement proposed by section 4 is fundamentally flawed.

First, the labeling provisions of section 4 would replace a highly successful program of informing consumers about the claimed health risks of smoking with a program of unknown and potentially counterproductive consequences. All of the studies conducted about consumer awareness of smoking and health issues lead to the conclusion that people are universally aware of the claims that smoking is hazardous to health, and you can go back into the smoking section of a plane and simply verify that by talking to people and asking them.

So why abandon this program in favor of a course that is not only uncharted but, as I hope to demonstrate, likely to lead to results quite the opposite of those apparently intended by the bill's sponsors?

The other basic flaw in section 4 is that the system of rotated warnings attributing specific health problems to smoking will probably lead to one of two unhappy effects: Either consumers will erroneously believe that they will personally suffer the specific health problems identified in the warning statements and say yes, I will have a heart attack or get lung cancer, and if people did that, and you know only some will, then Congress is mandating a law which deceives some people. Now that is one possible consequence.

The other possible consequence, and probably the more likely one, is that people would read the ad and say, some people will get heart disease, or lung disease. But we know that these are minority phenomenons, those are risk factors that only apply to a certain proportion of the people.

Most of the people will, as human nature always is, say that is for the other person. Now let me explain just a little bit about the point.

The point is important to whether people do have the information about whether it is hazardous or not. Professor Wind has quite well summarized those data, and those data are described in pages 3 through 7 of my statement, so I would not repeat them, the problems with the assertion that people do not know the fact that a lot of information is disseminated on this subject.

Professor Wind and I did not interact before, but our analysis was very similar. Mr. Chairman, I think one of the most interesting things is, if you supplied these studies to all of the leading consumer behavior professors, or people who are used to analyzing a panel of people who would objectively evaluate it, I just do not see how you would come to any other conclusions from those experts other than the one that people do know, or do believe, that smoking is hazardous.

Now, so I will not repeat those specifics. They are in the statement. But those are the empirical evidence. The other problem, and I think this is the one that bothers intellectuals, bothers everybody perhaps, that if people know this they would act on it. But it would be wrong to conclude that consumers are not adequately informed just because they do not act upon it.

As a matter of fact, the studies done by the FTC, commissioned by the FTC, flatly refute this position. The 1980 Chilton study came to the conclusion as follows, and I am quoting from page 22, "Factual knowledge about the health consequences of smoking was not found to be significantly related to current smoking behavior."

In other words, the FTC's own commission studies indicate if people had this information, no more difference between knowledge levels of smokers compared with nonsmokers were found to be significant at the 0.05 level of significance than were to be expected by chance.

So basically my position is that if you are trying to put in information that would be more relevant to some people, those who are at risk in heart attacks, you are by definition putting in information that is relevant to the people who do not consider themselves in those risk categories.

My objection, and I am a nonsmoker and I suspect I empathize quite a bit with the view of wanting people to not smoke as much, but my position is you would be creating a rule which said to many people, this is for people who are older, the ones who get heart attacks and the ones who get lung cancer.

For example, people over 65 have almost 2,000 percent more likelihood of malignancy than young people. We now have a system in which parents and peers, who probably influence the real decision to smoke, can say the Surgeon General has determined that smoking is hazardous to your health.

And what we are doing is trying to talk about a system that would replace that with one that consequences that are uncharted, and everything in the empirical evidence that does exist and in consumer behavior theory indicates that there is no reason to believe that this will be more effective, and in fact there are some very strong probabilities that it would be counter to the intentions that probably many well-meaning people intend for this bill.

Thank you.

[Testimony resumes on p. 486.]

[Dr. Blackwell's prepared statement follows:]

STATEMENT OF DR. ROGER D. BLACKWELL

My name is Roger D. Blackwell. I am Professor of Marketing at the Ohio State University, specializing in the analysis of buyer behavior and development of marketing strategy. My Ph.D. degree was earned at Northwestern University, with a concentration in consumer behavior. I have authored or co-authored fourteen books and over fifty articles published in professional or business journals that report research that I and others have conducted concerning the communications process, consumer decision processes involved in buying and using goods and services, and variables involved in marketing strategy. One of my most recent books is the fourth edition of Consumer Behavior, published this year. The book describes psychological principles involved in buying and consumption and is the most widely adopted textbook in the field. A complete list of my publications is submitted with this statement.

This is my personal statement and should not be construed to reflect the views of the Ohio State University or any other institution with which I am or have been affiliated.

I have been asked to analyze Section 4 of H.R. 5653, which would change the present labeling requirements for cigarette packages and advertisements. The rotational system of warning statements proposed by Section 4 of the bill is similar to a recommendation made last year by the Staff of the Federal Trade Commission in a Report on cigarette advertising, and I have evaluated the findings and conclusions of that Report as well.

In my opinion, the change in the warning statement proposed by Section 4 is fundamentally flawed. First, the labeling provisions of Section 4 would replace a highly successful program of informing consumers about the claimed health risks of smoking with a program of unknown and potentially counterproductive consequences. All of the studies conducted about consumer awareness of smoking and health issues lead to the conclusion that people are universally aware of the claims that smoking is hazardous to health. Why abandon this program in favor of a course that is not only uncharted but, as I hope to demonstrate, likely to lead to results quite the opposite of those apparently intended by the bill's sponsors?

The other basic flaw in Section 4 is that the system of rotated warnings attributing specific health problems to smoking will probably lead to one of two unhappy effects: either consumers will erroneously believe that they will personally suffer the specific health problems identified in the warning statements, even though such problems affect only a minority of the smoking and nonsmoking population, in which case the warnings would be deceptive; or consumers will correctly perceive that only a small proportion of the population is at risk from the stated health problems, and will thus conclude that the Surgeon General and other health authorities have now decided that smoking is not hazardous to all people. Since it appears that the specific diseases identified in the proposed warning systems apply primarily to older people, the probable effect of the law would be to reduce drastically the impact of the warning statement on young people.

The rotational warning system proposed in the present bill and the FTC Staff Report apparently is based on the assumption that present public awareness of the claimed health consequences of smoking is "insufficient." Finding 7 in Section 2 of H.R. 5653 states that "present Federal, State and private initiatives have been insufficient" in conveying information about the claimed health consequences of smoking to the American public. Similarly, the FTC Staff Report asserts that "additional action designed to provide consumers with more information about the health consequences of smoking is necessary." (Report at p. 21) For several reasons, this assumption is dubious.

In the first place, determination of what constitutes a "sufficient" level of awareness in such a complex area is both difficult and subjective, although it appears to me that, by any standard, the level of awareness about the claimed health hazards of smoking is astonishingly high. A basic question is the amount of information a consumer can reasonably be expected to be aware of in connection with a decision to use any particular product. Many of the questions posed in the surveys cited by the FTC Staff required a detailed scientific knowledge about questions of smoking and health, including a complete awareness of every health problem that has been attributed to smoking, the specific size of the increase claimed in the risk of incurring each problem if one smokes, the percentage of each particular health condition that is attributed to smoking, and the proportion or number of people who die from a given health condition. From the consumer viewpoint, what value is there in possessing such a complex array of information? When one considers the tremendous amount of information to which the consumer is exposed every day, and the fact that consumers do not possess unlimited processing capacities, it clearly would seem more functional for the consumer to retain in memory the overall implication of these numerous bits of information about the claimed consequences of smoking, i.e., that smoking is dangerous. That is precisely the information conveyed by the present Surgeon General's warning statement.

Proper evaluation of the adequacy of consumer awareness also is hampered by the fact that there is no baseline for comparison. For example, how does consumer awareness about smoking and health compare to the information consumers possess about the health hazards attributed to other products such as automobiles, liquor, and hang-gliders? Without such comparison, judgments about the sufficiency of the level of consumer awareness are highly subjective and cannot serve validly as a basis for the far-reaching changes embodied in Section 4 of the bill.

Moreover, an examination of the studies on which the FTC relies for the proposition that consumers are not sufficiently aware of the dangers associated with smoking reveals that those studies are defective in several important respects.

Perhaps most significant is that many of the survey measures assessed beliefs rather than awareness. The distinction between belief and awareness is a critical one given the existing controversy over the health threats presumed to be posed by smoking. Consider the likely situation of a survey participant who recognizes that smoking has been found to be associated with particular health problems but finds the evidence insufficient for demonstrating that smoking causes these health problems. Thus, the person is aware of the claimed link between smoking and some health problems but does not believe that smoking causes the problems. As stated in the 1980 Burke Marketing Research Focus Group Study commissioned by the FTC:

> "Further doubt about the direct relationship of smoking and cancer seems to be related to the fact that these persons had known smokers who had lived long lives without contracting cancer and non-smokers who had suffered from that disease." (Burke Study Analysis at p. 4.)

Many of the measures employed in the studies asked the respondents to indicate their agreement with or the correctness of statements such as "smoking causes X." Respondents who disagreed with these "supposedly true" statements are categorized as unaware. Alternatively, these respondents may be aware of the medical evidence but have concluded that while smoking is "related" to X, it does not "cause" X. Evidence supporting this alternative explanation is provided by the 1980 Chilton study conducted for the FTC Staff. At one point survey participants were asked whether heart disease "had been found to be associated with cigarette smoking." (Question 42e) Only 9.8% of the teenagers and 9.3% of the adults interviewed answered incorrectly (i.e., "No" and "Don't know" responses). Later in the interview, these same persons were asked whether the statement "cigarette smoking is a major cause of heart disease" (Question 52) was true or false. 26.8% of the teenagers and 39.6% of the adults were presumed to be "unaware" of the claim embodied in this statement. Such response variations between questions involving the same disease, but which differ in positing smoking as either the cause of or simply associated with that disease, strongly suggest that many persons classified as "unaware" in fact are aware of smoking's asserted relationship to various health risks. These persons simply do not believe that smoking causes these health problems.

Question wording has long been recognized as a critical area in survey research. The FTC Staff Report acknowledges that ". . . conservative sounding statements have been found to be more likely to generate agreement . . . ." (Report at p. 3-3) By the same token, statements employing extreme wording or phrases are likely to inhibit agreement. Thus, the amount of agreement with the statement "smoking is by far the greatest cause of lung cancer" used in the 1980 Roper Study was probably lower than had the statement been phrased "smoking is the greatest cause of lung cancer." Wording ambiguity can also influence the response patterns to a question. Phrases repeatedly appearing in the Roper Study such as "by far," "greatly increases," and "significantly increases," are very subjective. For example, some people may perceive a 30% risk increase as a significant increase, while others may not.

It is interesting to note that the FTC Report cites evidence that people tend to ignore or discount statistical information in making judgments. (Report at pp. 4-14 and 4-15) Given this evidence, it seems inconsistent to employ measures of "statistical knowledge" for assessing the level of awareness concerning the claimed effects of smoking. Measures of this type, however, were frequently employed as indicators of consumers' awareness about the asserted dangers of smoking (e.g., "What percent of lung cancer cases are caused by cigarette smoking?" - Chilton 1980; "Smokers are at least ten times as likely to develop lung cancer than non-smokers" - Roper 1980).

For these reasons, it would appear that current studies have underestimated consumers' awareness about the health hazards associated with smoking. There is, unfortunately, no way of predicting how much underestimation error exists in these data. But in view of the fact that these same studies consistently report awareness levels in the 80 to 90 percent range, it is fair to conclude that public awareness of the various claims about smoking and health is as a practical matter universal.

It would be wrong to conclude that consumers are not adequately informed about the claimed health consequences of smoking simply because many consumers continue to smoke. The FTC Staff Report states several times that smokers are not as well informed as nonsmokers, implying that such informational differences are responsible for the decision whether or not to smoke. That conclusion is flatly refuted by the 1980 Chilton Study, the very study cited by the FTC Staff to demonstrate the supposed difference in the levels of awareness between smokers and nonsmokers. The conclusion reached by the Chilton Study was as follows:

> "Factual knowledge about the health consequences of smoking was not found to be significantly related to current smoking behavior. No more differences between knowledge levels of smokers compared with non-smokers were found to be significant at the 0.05 level than were to be expected by chance." (page 22)

This important finding that consumer knowledge has no relationship to smoking behavior refutes the notion that people who smoke do so because they are "uninformed" about the claimed dangers of smoking. The lack of a relationship between awareness and smoking also demonstrates that increasing consumers' awareness about the health hazards attributed to smoking is unlikely to influence their smoking behavior. Consequently, to the extent that the present bill is based on a desire to reduce smoking -- and putting aside the question whether behavior modification is an appropriate goal for government in this country -- the warning statements proposed by Section 4 are simply irrelevant.

Given these facts, a change of the sort contemplated by Section 4 should not be undertaken unless there is significant evidence that the proposed system of rotated warnings would better achieve the goal of informing the public. The little evidence that exists not only fails to support that proposition, but in fact contradicts it.

An initial study for the FTC Staff was undertaken in 1980 by Walker Research to assist in the selection of specific warning statements, while another study conducted by Burke Marketing Research examined consumers' recall of various warnings. Importantly, neither study examined the impact of such warnings on consumer awareness. There are accordingly no data to indicate that a rotational system such as that proposed by the bill would meet the objective of providing consumers with "sufficient" awareness about the claimed consequences of smoking, particularly if sufficiency is gauged by the very detailed measures used in the surveys cited by the FTC Staff.

What the studies do demonstrate is that consumers are likely to discount warnings that link smoking to specific health problems. In its Summary of Key Findings, for example, the Burke Focus Group Study states:

> "The messages related to birth control pills *and* heart attacks tended to confuse the participants, who did not thoroughly understand the synergistic effects which form the basis of the message. *These two statements relating to oral contraceptives also had the least personal relevance and were rather easily dismissed as being intended 'for someone else'.*" (Emphasis added.)

The Study thus concludes:

> "It seems that the birth control message could have relevance to a highly select group of people who could be best reached through very specific media. The message might be lost to the population as a whole." (Burke Focus Group Study Analysis at p. 6.)

That same conclusion appears to apply with equal validity to each of the specific disease warnings contemplated by H.R. 5653.

Thus, even the preliminary research that has been done tends to support the conclusion that the proposed rotational warnings would be considered irrelevant by some consumers, as compared to the present warning statement that announces to every consumer the Surgeon General's conclusion that "smoking is dangerous to your health."

These findings are particularly significant in view of one of the major premises of the FTC Staff Report, and presumably of the present bill: that consumers should perceive information concerning smoking and health to be personally relevant. Since it is basic to human nature to conclude that risks apply to "the other person," specific warnings that might be more personally relevant to some consumers would by definition be personally irrelevant to most other consumers. For the individual who sees these diseases as unlikely to occur personally, then the proposed new warnings would be less relevant. Such individuals are particularly likely to be young consumers who may be making the decision of whether to smoke or not. While the decision to smoke is not related to advertising, at least in the present situation parents or peers can say to people who are deciding to smoke that "the Surgeon General has determined that smoking is dangerous to your health." Under the proposed new warnings, the logical conclusion would be that the Surgeon General has no longer determined that smoking is generally unhealthy, but only unhealthy for certain older segments of the population or for pregnant women.

As an analyst of consumer behavior and decision making, I am of the opinion that H.R. 5653 may well have the opposite effect of that which appears to be intended by its sponsors. I am concerned that H.R. 5653, no matter how laudable the intentions of the sponsors, is not desirable legislation if the goal is to have the general population, and especially smokers, aware of the health hazards that are alleged to occur from smoking.

Mr. WAXMAN. Dr. Blau.

STATEMENT OF THEODORE H. BLAU, PH. D.

Dr. BLAU. Thank you, Mr. Chairman, for the opportunity of appearing here today. I will be brief and submit details of the research background of my statements to your staff.

My name is Theodore Blau. I hold a doctorate in psychology, received from the Pennsylvania State University in 1951. I have been in independent practice of clinical psychology and consulting psychology in Tampa, Fla., since 1953.

Formerly, I was professor of psychiatry at the Medical School of the University of South Florida, and professor of psychology at that school and others. I hold a diplomate in clinical psychology from the American Board of Professional Psychology as well as the diploma from the American Board of Forensic Psychology.

I am a member and past president of the American Psychological Association and am currently president of the American Psychological Foundation. I am also a member of the Evaluation Research Society and have conducted evaluation studies for private corporations as well as evaluation research for various branches of the U.S. military and other elements of the Government. I am the author of 1 book, a number of chapters and approximately 50 articles.

For several years, I have been involved in an evaluation of the research and current state of knowledge about the psychological aspects of cigarette smoking. The evaluation includes a thorough review of historical factors, current theories and research, quality of the research and publications pertaining to dependence, addiction, laboratory and applied research and cultural aspects of smoking behavior.

In addition to this literature review, I have also communicated with active researchers working in the area. I am presently writing the section entitled "Smoking Behavior" that will be published in the "Wiley Encyclopedia of Psychology."

It is my understanding that proposed bill H.R. 5653 would mandate a warning on cigarette packages stating that cigarette smoking is addictive. I will address myself today to that conclusion.

For almost 400 years the smoking habit has been an issue never lacking proponents as well as opponents. Some who smoke seem unable to give up the cigarette habit, at least during certain decades of their lives. Others can quit with apparent ease.

Few specific areas of applied psychological research have received greater attention than the cigarette smoking habit. Despite this intense scientific focus on the behavioral as well as psysiological aspects of cigarette smoking, no general agreement among scientists exists in answer to the question of whether cigarettes or their contents are addictive.

The behavior and responses of cigarette smokers are quite different than those observed in individuals who are addicted to heroin and other substances that are demonstrably addictive.

The scientific literature demonstrates the following:

There is apparently no difference in the severity of cessation responses between light smokers and heavy smokers. Research also has shown that these effects are felt more severely by those who reduced dosages but did not stop completely than by those who abstained totally.

A third aspect reported by various researchers is that smoking cessation effects are relatively mild and in some cases non-existent. They are of a nature which might be expected to follow the loss of psychological rewards from any loved object to which a person was long accustomed and which could be conceived of as forming an important part of the way the individual sees themselves and their behavior.

It has been reported that many smokers are able to refrain from smoking for relatively long periods of time for practical, safety or religious reasons and to do so without apparent discomfort. Some examples are coal miners who may not smoke at the pitface, Orthodox Jews who give up smoking at sundown on Friday and cease smoking until sundown on Saturday, and so forth. Such behavior does not fit conventional views of addiction.

Whereas the effects of use and withdrawal are consistent and predictable with known addictive substances despite a wide range of uses, descriptions of tobacco effects are extremely varied and inconsistent. In this regard, tobaccco use is more like the use of caffeine rather than alcohol or opiates.

It has been reported by Costa, in 1980, that the continuance of smoking appears more related to a wide range of psychosocial motives such as pleasure, stimulation, sensory motor manipulation, and reduction of negative effect than an addiction factor.

The U.S. Department of HEW reported in 1977 that 95 percent of those people who quit smoking do so on their own. This is not only a phenomena in sharp contrast to experience with demonstrably addictive substances but one which remains to be explored.

Clearly, many areas of smoking behavior are as yet unexplored including why some smoke very heavily and some do not. Carefully controlled animal studies must be done before a scientific description of the smoking habit can be expected. Promising work with Rhesus monkeys has been reported by Kiyoshi and Yanagita—in Japan and researchers at the Southwest Research Institute—Rogers—have reported conditioning laboratory baboons to smoke cigarettes. These developments suggest that we may be able to study cigarette smoking in a properly controlled laboratory setting.

Until such controlled animal experiments with reliable models of self-administration of tobacco can be devised and conducted as they have been with morphine, cocaine, and alcohol, the concept of tobacco addiction will probably remain a hypothetical construct only partly understood as suggested by Jarvik, 1977. And so, gentlemen, at this time the scientific data do not support the statement: Cigarette smoking is addictive.

I would very briefly like to tell you my clinical experience with smoking. During the past 30 years I have worked and continue to work with people who smoke cigarettes. In reviewing my experience with the thousands of people that I have seen profesionally, many of whom were heavy smokers, I find some continued, some quit with stress, and some quit with little or no stress. These patients of mine in no way acted like the patients that I have seen who struggle to be released from the addictions of opiates or alcohol or amphetamines.

Cigarette smokers are very attached to their smoking behavior. They are often annoyed or distressed when they are not allowed to smoke. However, I have also noted people have equally strong attachments to tennis, jogging, candy, rock music, Coca-Cola, members of the opposite sex, and hamburgers; particularly in my adolescent patients.

With children, one sees very strong attachments to playmates, parents, certain articles of clothing, TV, blankets, and teddy bears. Removal from these activities, persons or objects can result in agitation, sleeplessness, irritation, depression, and other uncomfortable symptoms. They vary considerably in intensity and duration, as do the effects of abstinence from tobacco smoking.

I, myself, smoked cigarettes for 24 years. Two to three packages a day for the last 10 years of the habit. I stopped at the age of 35, 1 year before the first Surgeon General's report, and have not smoked since. I was somewhat uncomfortable for a short period of time, but was never highly uncomfortrable. The craving never reached the level that I have experienced in medical weight loss programs or in alcoholic rehab clinics.

In short, although cigarette smoking is a common and pervasive habit, I can find no convincing basis in the scientific literature or in my own professional clinical experience to justify labeling it or treating it as an addiction.

Mr. WAXMAN. Thank you very much, Dr. Blau.

Dr. Wind, I was interested in your evaluation of the FTC report. You reached the conclusion that we shouldn't take that Federal Trade Commission report as the basis for this legislation. The people evidently, in your opinion, know about the dangers of smoking; is that correct?

Mr. WIND. Yes.

Mr. WAXMAN. They nevertheless still smoke. Do you believe, on the other hand, that the advertising campaigns by the tobacco industry have a causal relationship to the large numbers of people that smoke?

Mr. **Wind**. I don't understand your question.

Mr. **Waxman**. Do you believe a lot of people smoke because of advertisements?

Mr. **Wind**. I don't think there is any evidence to suggest what is the relative importance of advertising. Smoking like any other behavior is a function of many things. There are many factors affecting it. I don't think that knowledge of the dangers strictly stems from having the label there.

Mr. **Waxman**. Listen to my question. People smoke for many reasons. Do you think one of the factors that encourages people to smoke is the cigarette advertising?

Mr. **Wind**. I doubt it. I have not seen any evidence to suggest the importance of advertising in generating demand for smoking. Typically, the data that I have seen focuses on switching, that advertising affects the switching from one brand to another, to a lower tar cigarette and the like.

Mr. **Waxman**. Have you seen evidence of this effect? Have you seen studies? Are you basing these conclusions on scientific studies?

Mr. **Wind**. There are some studies that show basically that advertising is related to brand switching.

Mr. **Waxman**. Do you think advertising at any point helps market a product and increases demand for the product?

Mr. **Wind**. Certainly. The introduction of any new product. But advertising is only one factor. In any introduction of new product, demand is a function of your promotion, distribution, word-of-mouth effects, experience with the product et cetera. Furthermore we have to look at one other factor. We are talking about a frequently purchased and used product. Advertising typically can help you in the introduction of such a new product, generate trial.

The repeat is not a function of advertising. The repeat is typically a function of the experience with the brand and everything else surrounding the other inputs people get.

Mr. **Waxman**. It's fair to say while there are many factors that go into the introduction of a new product, advertising is one factor that does promote the trial of a new product?

Mr. **Wind**. Correct. This is typically one of the effects.

Mr. **Waxman**. Do you disagree with that statement, Dr. Blackwell?

Dr. **Blackwell**. Not basically, no.

Mr. **Waxman**. So we can have people try cigarettes, and oftentimes we are finding young people trying cigarettes because of a lot of different factors, one of which is advertising. Dr. Blau says that cigarette smoking is not addictive; is that a correct statement?

Dr. **Blau**. There is no scientific basis for a statement that cigarette smoking is addictive.

Mr. **Waxman**. Do you think that the use of cigarettes, has some kind of relationship to people wanting to continue using them a little bit more than other kinds of products that might be used very often?

Dr. **Blau**. I think that is a question of very serious concern. I made a visit to Dr. Evans' laboratory in Houston. He works specifically with the question of how do people start smoking, what keeps teenagers smoking.

I see a group every week made up of seven people between 7 and 13 years of age. During the past few years I have observed the genesis of the smoking habit. One thing impressive from the research, I might point out, is that there are some indications as to how these teenagers are drawn into the habit. The first element is the parental model, the second is the sibling model, the third, peer group pressure.

I am quite taken by the fact that many of my heaviest smokers, my teenagers that I work with, don't read. They are very poor readers. They are dropouts from school.

Mr. WAXMAN. So there are different factors?

Dr. BLAU. Many factors.

Mr. WAXMAN. Once they take up using the cigarette product, isn't there some attachment that keeps them smoking? More than just the original reasons to take it up?

Dr. BLAU. Yes, sir. I think there are probably a multitude of factors that have been reported in the literature. There are indications that the habit, after an initial aversive response becomes pleasurable, for some it relieves tension, it's a social grace in some people's mind. For a small group of so-called diddlers, it's important to have something to do with one's hands. It arouses some. It tranquilizes others.

The amount of research which is done has stirred many questions that must be explored and answered. I am fully confident in the future we will have a definitive answer as to how people learn to smoke, why they continue to smoke. And from that, clear-cut directions as to how to go about preventing the inception of a habit.

Mr. WAXMAN. Do you believe the reason people continue to smoke after they start smoking has less to do with advertising and more to do with these other factors?

Dr. BLAU. I am afraid that I must plead innocent on knowledge of the advertising factors. I can only speak for the other factors. I think they are terribly strong, the psychosocial factors in my observation, and evaluation of the data.

Mr. WAXMAN. Let me ask the marketing people. Dr. Wind, what do you think? Do you think that the reason why people continue to smoke relates more to the reasons that Dr. Blau said, the pleasure response, tranquility response? Once they try this new product, advertising is not as important a factor?

Mr. WIND. I think it would be very dangerous to try to speculate here. This is an empirical question. There are procedures today that allow us to find exactly what is the relative impact of advertising on behavior, in various areas, and I think what we have to do is conduct a study. I am not familiar with a specific study that looked at this question, comparing the effect of advertising versus peer group, parent and others in terms of what is their influence. I think such a study can be conducted and provide the right guidelines.

There is one other thing to remember here, which is that cigarettes in some respect are really not like any other product. Most other products do not have counter communication. There is a tremendous amount of educational material, influential material and communication against smoking. So the person, in making the decision, is basically bombarded with both pro and con arguments for it, and makes his decision in some manner.

So I would suspect, strictly speculation, that can be verified in empirical testing, that advertising would have less of a role here because of this counter communication than in other situations.

Mr. WAXMAN. Because of the kind of communication? Are you speculating?

Mr. WIND. That is speculation.

Mr. WAXMAN. You don't want to speculate on whether advertising plays a lesser role in whether people continue to smoke?

Mr. WIND. It's a hypothesis that has to be tested. This would be a good hypothesis for a research project.

Mr. WAXMAN. Unfortunately, we have a limited budget so I won't contract with you for that study. Perhaps the tobacco industry will do that for us.

Do you think that if I asked you in your marketing expertise, how I could achieve the objective of discouraging young people from taking up the habit of smoking, and encouraging people who smoke to quit, that there would be some effective way of doing that over and above what we are doing now, through the warning label that is on the package and through the messages that come through from hearings like this and Surgeon General's reports?

Mr. WIND. My guess would be that probably yes, even though you are extremely effective today. You have a very high level of awarness. If you are trying to change people's behavior, and you are trying to influence people to change their behavior by reducing smoking, I think there are ways in which marketing can help in the following way:

One, we will conduct a series of studies to find out why people smoke, why people don't smoke, why people quit. Once we understand the reasons why, we will go to second step, which will be, let's try to generate a series of alternative strategies that we hope will lead to the right results.

Three, once these are generated go back to the consumers and try to test them to see which of these strategies is the best in achieving the right objective. None of these was done in the specific situation here.

The FTC report came with a number of suggestions. They started generating about seven options, but they are a relatively limited range of options. Why not try to open this? Why not base the options on some insight and understanding why people smoke, why they continue smoking? I think the whole approach is faulty. It's not a marketing approach to deal with the problem. I think there are approaches that could help and provide guidelines.

Mr. WAXMAN. You think we should have marketing results to indicate what would be the most effective way, not just of communicating a message which you feel has already been communicated, but communicating a message in a way that would change behavior?

Mr. WIND. That is your objective?

Mr. WAXMAN. There are ways of doing that, I assume?

Mr. WIND. Yes, there are.

Mr. **Waxman**. Just as there are ways of encouraging people to take up cigarettes? Have you done marketing studies on why people smoke, why they pick it up, what groups would be influenced most by kinds of smoking promotions? Is that done?

Mr. **Wind**. I personally am not aware of such studies, but if you are trying to do it. That is the approach.

Mr. **Waxman**. Don't people come to marketing experts to figure out a strategy to promote their objectives?

Mr. **Wind**. Yes, they do.

Mr. **Waxman**. Do you think that the cigarette companies and tobacco companies go to marketing experts to try to figure out how to promote people to smoke cigarettes?

Mr. **Wind**. I assume they do. They have marketing consultants and research firms working for them. They have their own marketing research departments. I don't know whether they follow the procedure we just described before in trying to increase the sale of cigarettes to nonsmokers.

Mr. **Waxman**. If you have a lot of money, you can afford to do a lot of different things, hire marketeers, outside experts, try things and see if it works and if not, abandon it. You can change your advertisements or try new strategies and abandon old ones. The only limitation on that is money?

Mr. **Wind**. Not necessarily. You are assuming a symmetry. I said in response to the first question that you had that you can probably, if you find out the causes for smoking versus nonsmoking, the causes that lead people to quit, to be able to design effective programs that will encourage and help you achieve your objective which is reduction in smoking. Given that there is so much pressure against smoking, I am not sure that there is a symmetry here. That by finding these reasons, you will be able to design strategies that will increase the number of smokers.

Mr. **Waxman**. There is a pressure to take up on smoking as well?

Mr. **Wind**. I find it very difficult to accept. There is no advertising or other message that will convince me to go back to smoke.

Mr. **Waxman**. I don't think advertising, as you pointed out so correctly, is the only factor that influences behavior.

Mr. **Wind**. I have difficulty——

Mr. **Waxman**. I think seeing an athletic event sponsored by the R. J. Reynolds Co., might well, if I am a younger person interested in athletics, influence me. You know the R. J. Reynolds Co. spends a lot of money promoting various athletic events. I would think that is one of the benefits they get from that.

I think the marketing strategists can figure out a lot of ways to promote products or devise a strategy to encourage sales of the product. Dr. Blackwell, you claim those warning labels are going to fool people, they will be deceived into thinking that they will not get the disease or that only old people will get the disease; is that correct?

Dr. **Blackwell**. I claim there will be some confusion that will come from those among some people. There is some evidence of that, of course, in the FTC studies.

Mr. **Waxman**. Dr. Wind says we shouldn't even pay attention to the FTC studies?

Dr. **Blackwell**. There are many studies. The children's study, the Walker study and——

Mr. **Waxman**. Do you think most pregnant women understand that cigarette smoking may result in birth defects or spontaneous abortions?

Dr. **Blackwell** [continuing]. I doubt that mothers do. That is not the same thing as saying therefore the way to correct that is that. The way to correct that is to use specialized media with information in public releases, public information, rather than a television ad—not a television ad, but a print ad that would go to everyone and cause those people to consider that an irrelevant message.

Mr. **Waxman**. Dr. Blau, I have just two questions for you. Would you agree that the epidemiological evidence reveals strong statistical correlation between smoking and various health risks—let me ask this of Dr. Eysenck, you are probably better qualified. If there was epidemiological evidence that gives a strong correlation between smoking and various health risk factors, shouldn't this play an important part in public health policy?

Dr. **Eysenck**. Evidence has been published to that effect. But it has certain drawbacks. The units in which it deals are quite incomparable. In other words, you are dealing with diagnoses. We know at the moment lung cancer is being over-diagnosed. In other words, when you compare diagnoses with postmortem, then only a certain proportion of those diagnosed as having died of lung cancer, in fact are found to have done so.

And it was severely under-diagnosed at the beginning of the century, in the beginning of the curves shown in the Surgeon General's report, by a tremendous amount. We found, for instance, the people actually dying from lung cancer, only 4 percent were diagnosed.

Mr. **Waxman**. You don't believe epidemiological evidence reveals a strong statistical correlation between smoking and various health risk factors?

Dr. **Eysenck**. It is so faulty it is very difficult to draw any proper scientific conclusion from the data.

Mr. **Waxman**. Dr. Blau, you stated, apparently with some confidence, that there is no general agreement among scientists as to whether cigarettes are addictive. The Director of the National Institute on Drug Abuse and the Assistant Secretary of Health made it clear that in their opinion smoking was in fact addictive, and this was also the conclusion of the National Advisory Council on Drug Abuse and a special task force of independent researchers convened by NIDA's Division of Research.

That sounds like a consensus of opinion. Are you asking us to believe these distinguished physicians and researchers were wrong and you are right?

Dr. **Blau**. I appear before you as an evaluation scientist. Evaluation is the assessment of merit. It's sort of like asking the goats to guard the lettuce patch when you ask scientists to make long range general statements about their research. The very essence of science is caution. One of the outstanding researchers in tobacco, Dr. Stanley Schacter, a member of the distinguished board that you just mentioned said, and I quote from a Government publication, "Most of us who do research on smoking have at some time championed the hypothesis that cigarette smoking with nicotine as the active agent is an addiction."

Sometimes, however, it's difficult to figure out why that conviction is so strong. The data supporting the proposition are not particularly good. In fact, looked at with a ruthless eye, they are rather flimsy. When scientists are asked to weigh the evidence with care in terms of the long range implications, they generally agree that we have a long way to go before we can give a scientific support to the statement, cigarette smoking is addictive.

Mr. WAXMAN. Thank you very much.

Mr. Bliley.

Mr. BLILEY. Mr. Chairman, thank you, gentlemen.

I believe Dr. Wind, that you said in your testimony that with 90 percent of the people knowing the dangers, that it would be very difficult to change. Do you believe that by going to a system of rotational warning labels, that it's possible to increase the awareness above 90 percent?

Mr. WIND. No; I doubt whether you will be able to find any procedure, any marketing gimmick, strategy approach, that will increase awareness in general population more than 90 percent. I am not familiar with any case——

Mr. BLILEY. I don't want to interrupt you but I don't want to consume too much time. Are you saying that there is nothing that we can do that will increase the awarenes of the dangers, not just labeling, but anything else that would increase the 90 percent?

Mr. WIND [continuing]. You are correct. In all of my life as a researcher, scientist, in all of the material I have seen, I have never seen a study that will document that there is more than 90-percent awareness of any phenomena.

Mr. BLILEY. Dr. Blackwell, I have observed casually and keenly since this legislation has come along, but for a number of years, observed people including my wife buying cigarettes. I have never seen a person pick up a pack of cigarettes in a store or a counter, reads a warning label and put them down. I have never seen a person walk up to a cigarette machine, put coins in it, or about to put coins in, reads a warning and turn away and walk away.

I have seen them walk away when they didn't have the correct change but not for reading any label. Have you done any studies or are there any studies that show that indeed I am wrong in that people do come along and pick up these things and read warning labels and then discard it?

Dr. BLACKWELL. No. That is an astute observation. I have seen no studies that would refute that.

Mr. BLILEY. I see. We have been talking about studies and research to evaluate why people smoke and why they stop, or not, as the case may be. How much would it cost, in your opinion, Dr. Wind, to do a study for the benefit of Congress and this committee in particular, as to what causes people to smoke, and what causes people to stop?

Mr. WIND. I don't think I will be able to answer with a specific number. It's not a single study. It's a program of research. You have to use different approaches to try to answer. Some of them are not as effective in getting a valid answer. You have to commit yourself to a program of research that might cost, you know, a few hundred thousand dollars over a period of time, to find out the causes and then to try to move into generating strategies and then evaluating them.

Mr. **Bliley**. $400,000 or $500,000?

Mr. **Wind**. I really cannot pinpoint the number. But I would say it's likely.

Mr. **Waxman**. Dr. Blackwell.

Dr. **Blackwell**. That would be a good start on it, yes.

Mr. **Bliley**. How long, 2 or 3 years?

Dr. **Blackwell**. I don't think you will answer it definitively for every person. But you can isolate some of the major causes of major segments in a few years and a few hundred thousand dollars.

Mr. **Bliley**. I see.

Mr. **Wind**. Time is difficult to assess because you are dealing with a program of research. The next step depends on the results of the first one. So it is an evolutionary problem. You need a commitment, instead of coming with a proposal that is not based on an empirical basis, and suggests seven labels, to commit yourself to say, I will make a bill based on empirical data that responds to a real problem out there, and that is the best way of achieving my objective.

Mr. **Bliley**. Thank you.

Thank you very much, Mr. Chairman. It probably would cost us less money than setting up another bureaucracy at HHS and achieve better results in a couple of years. I yield back the balance of my time.

Mr. **Waxman**. Mr. Dannemeyer.

Mr. **Dannemeyer**. I have a question for Dr. Eysenck.

You state that the personality of the people involved is a mediating factor between cancer and smoking. Can you present for this subcommitee a personality description of a smoker?

Dr. **Eysenck**. Well, in several different countries the people who smoke tend to be typically extraverted, social people, people who like to go out in the world, mix with other people, who like to have strong sensory experiences. People also tend to drink and have other social habits of that kind, that is one type of smoker.

Another one is the nervous and emotionally somewhat unstable individual. They smoke for a different reason, of course, the extrovert smokes because he easily gets bored and he has to have some kind of drug that elevates the level of arousal, which smoking does. The more emotionally unstable type of person needs something to sedate him, to calm him down, a kind of librium more easily accessible and more pleasurable than a drug. So he smokes.

Then you have people who are generally nonconformists, who are somewhat antisocial. They also tend to smoke. So you have different types of personalities that go in for smoking and they do so for different reasons. There is a large amount of evidence available at the moment about motives for smoking and they are intimately linked with personality.

Mr. **Dannemeyer**. Thank you. We previously had a gentleman here from the advertising fraternity, now we have two professors from the advertising fraternity. I can only assume that you have, in the course of your tenure in academia, had the privilege of instructing students who have found their way into the advertising community. So I will ask you gentlemen again: Do you believe that it advances the cause of the advertising community to respect these principles? Keep it simple, clear, repeat it often, be singleminded, and consistent?

Dr. Wind, do you think that is a fair assessment of what the advertising community should be doing?

Mr. **Wind.** There is a distinction between what they should be doing and what they are doing. Should is a normative statement. It suggests that we have a theory that tells us how advertising works. Unfortunately, despite all of the research that has been going on over the years in marketing and advertising, we do not have, today, a theory that tells us exactly how advertising works. There are different models and hypotheses that suggest what are the rasonable ways of proceeding and getting some output. Different agencies have different philosophies. Different agencies use different approaches. That is the reason different manufacturers select different agencies that bring different philosophies.

The notion of simplicity, yes, it has some merit. Many years ago it was coined in marketing as the unique selling proposition, that you are trying to come up with a single message, with a single benefit. There are studies in the cognitive psychology area talking about the limitation of the cognitive ability of people, that typically people cannot process too much information. So you are working on relatively simple type of one or two major benefits.

But I think the key issue here is not so much the fact that I have a theory here that guides me to come up with the single simple approach, but the fact that the market is heterogeneous. That we are not talking about a homogeneous population out there that a single message will appeal to every one of them.

If every single ad on TV will appeal to you, apparently they are doing something wrong because you are not the target segment of every one of these products. What they are trying to do, is deal with——

Mr. **Dannemeyer.** Why do so many exclude me?

I must be different?

Mr. **Wind.** Yes, I would asssume that you don't buy all of the products advertised on TV. Neither do I. For the ones you buy, advertising could have been one of the inputs that provided you some information. There are a lot of comparative advertising that provides you comparisons among brands. There are some sophisticated ads—look at industrial advertising. I think it is dangerous to generalize and say all advertising is poor, all advertising is insulting. I think some is. But it's possible that some of the advertising which is insulting is not aimed at us. And they placed it at the wrong media or they had a poor execution or someone did not know.

Mr. **Dannemeyer.** Dr. Blackwell, would you care to respond to that?

Dr. **Blackwell.** I was listening to Dr. Light's comment and he qualified to say this wasn't principles of advertising but principle of communications generally. If one were giving a political speech, for example, or a lecture in the classroom, Joe McGinness where a book called "The Selling of A President" a few years ago. Many newspapers have said the same thing. That is true of communication in general. To keep it simple, single-minded, because of limits of cognitive processing.

That is probably true for what might be called the middle 65 percent of the total population. There are people on either tails of those distribution. I don't know which tail you would be on, but that is probably happening. And——

Mr. DANNEMEYER. Ask our chairman, he will tell you where I am.

Dr. BLACKWELL. There are many qualifications to those simple, basic communications. Advertising tends to be to the masses. In communication theory, there is something known as one-sided communication and two-sided communication. In a one-sided communication you only present what you want people to know. In a two-sided communication, you tell them what is wrong with your product as well as what is right with it.

Now as a generalization, it's more effective to use a one-sided communication with the masses of the population. But for people who have high education or high intellects—not that those are always the same—for those kind of people the two-sided communication may be more effective. Dr. Light was quite correct in stating the principals that are generally accepted for communications with the masses. But there are qualifications, of course.

Mr. DANNEMEYER. I thank you.

Mr. WAXMAN. Would it be fair, then, to conclude from what you are suggesting that the cigarette advertising with the warning label that it carries today, may convey a dual message to a rather elite group of people? The dual message would include not only the call to switch to this brand or take this brand, but also that there may be some health problem to taking up smoking, and that this message is not being communicated to the masses or a larger group?

Dr. BLACKWELL. I got a little lost with the first part of the question.

Mr. WAXMAN. If you are stating that where there is a dual message communicated, it is communicated primarily to an elite group that is a little bit more willing to read and understand that there are two sides to the advertisement, would it be fair to conclude from that, that most people, in the more general population, don't get the dual message when they see an advertisement for cigarettes?

Dr. BLACKWELL. The higher complex message would be better received with people with higher education, in general. The more simple, direct or one-sided, which are—there are two or three things going on there, the very simple message would communicate better with the masses. That may have an application to this.

For example, the present warning would be most effective, if you could make the leap of faith from general research to the specific here, the message as it is now constituted would probably be far more effective to the masses of the population than these.

But for people with a high amount of education or the elite of the Nation or something, they might have some more effectiveness from some of these. So these are the kind of issues——

Mr. WAXMAN. Wouldn't it go to the question of whether any warning message gets communicated at all, whatever the content?

Aren't you saying only certain people pick up a warning message and most don't?

Dr. **Blackwell**. I don't think I am saying most don't. Most understand this. A simple message is better.

Mr. **Waxman**. You are not saying the reason most people understand that smoking is dangerous is because of the label?

Dr. **Blackwell**. I am saying people do understand it for a variety of reasons, including the label.

Mr. **Waxman**. What I am asking is whether the warning label, insofar as it is effective, is effective only with people who read it? Is it fair to say most people don't read all of the advertisements and that those of the higher intellectual levels who have more time to read the advertisement at a particular moment are most likely to read the whole thing and get the dual message, while those who only get an impression from the ad do not get the dual message?

Dr. **Blackwell**. Once they get the message, there is no reason for them to continue to read it all of the time. As Dr. Light said, they can see the symbol and it tells them.

Mr. **Waxman**. Changing the message does not reinforce the communication; is that a fair statement?

Dr. **Blackwell**. I wouldn't say that. I would say repetition.

Mr. **Dannemeyer**. How about if we put on there, like Reggie Jackson said it, rather than the Surgeon General. Or that Fred Lynn or Bob Grich said it. These are names that are known in the sports world in southern California. So is Vince Ferragamo; why not put his name on there. Do you think that would improve the credibility of the message?

Dr. **Blackwell**. No, because it really can't be improved. If no one knew the message, if people really didn't think cigarette smoking was hazardous, your suggestion would be perhaps appropriate. But how can you improve above 90 percent?

Mr. **Wind**. Can I interject a point? I think it's dangerous to try to generalize from other areas. Some of the work on the two-sided message was not really done in this context. It was done in experiments primarily in psychology. We are trying to project the results from there to the specific situation here.

I would submit it is an interesting hypothesis that has to be tested. The same thing with the notion of endorsement by known personalities. There is an issue here, yes, a lot of personalities are known by some, not necessarily everybody, but even those familiar with them, what is their credibility with respect to smoking? Do they have the credibility to deliver a message that people believe?

Mr. **Dannemeyer**. They are athletes. Presumably, to make a living, they have to preserve the ability of their bodies to perform over time—ergo, smoking is inconsistent with that. Therefore, if you want to be like them, don't smoke?

Mr. **Wind**. What do they know about health? Not all testimonials are effective. What you want to do is test it. Test and see, to what extent——

Mr. **Dannemeyer**. The advertising world apparently selects celebrities from the entertainment industry or sports industry and they put their faces on ads, the inference being that person is successful, therefore if you smoke or buy the products, you will enjoy the same success. I don't know what they are getting after but I guess that is what they seek to do.

Mr. **Wind**. John Wanamaker once said 50 percent of advertising is ineffective. Which half? A lot of this is wasted, a lot of the advertising is not very good. What we can do is experiment. Use approaches to test and see which personality, whether it's the Surgeon General, whether it's a sports personality, a politician or whoever, will be the best, most credible individual to deliver it.

Mr. **Dannemeyer**. Put Jerry Brown on that label.

Mr. **Bliley**. I thank my colleague for yielding. A couple of times during the course of the hearing this morning the matter has come up about cigarette advertising and sports celebrities. In the statement of Mr. Horrigan, or rather attached to the statement, is a list of principals governing cigarette advertising. And No. 6 and I quote: "No sports or celebrity testimonials shall be used or those of others who would have special appeal to persons under 21 years of age."

So if anyone has the impression they are using sports celebrities in trying to improve their market with young people, I would just like this to be a part of the record.

Mr. **Waxman**. If the gentleman would yield to me, I think my colleague from California has the time. The R. J. Reynolds Co. supports sporting events. Business Week reports that in 1982 the company will increase the number of sports car races from 16 to 19, as well as support 32 golf tournaments. I submit that they do this because I think they expect some promotional benefits to come from it, not just good will for the R. J. Reynolds Co. as a good citizen.

Mr. **Bliley**. If the gentleman would yield, they are not using players or participants to advertise the product. They might sponsor the events, but they are not using the participants, such as Reggie Jackson or I believe with a race car, Richard Petty might be more appropriate to advertise the brand of R. J. Reynolds.

Mr. **Waxman**. Anything further, Mr. Dannemeyer?

Gentlemen, I want to thank you for your participation. You have given us a lot to think about. I am particularly interested in the ideas of the marketing experts because it seems to me that we have to do a lot more to be as effective as we hope to be.

In my opinion, that is in support of the legislation, we ought to do something rather than merely rely on what we have done to date. But we should also do more than what I am proposing in this legislation. If we added to money spent on cancer research and devoted it to develop effective strategies to change behavior, we probably would be doing a lot of good in lessening cancer rates in this country. I would submit that you are absolutely correct, Dr. Wind, a lot of advertising money is wasted.

But the tobacco industry has a lot of money to waste in promoting their product. We don't have a lot of money to discourage smoking.

We will recess and come back at 2 o'clock.

[Whereupon, at 12:35 p.m., the subcommittee recessed, to reconvene at 2 p.m., the same day.]

AFTER RECESS

[The subcommittee reconvened at 2 p.m., Hon. Henry A. Waxman, chairman, presiding.]

Mr. **Waxman**. The meeting of the subcommittee will please come to order.

Our final witnesses will testify as a panel this afternoon. Arthur Furst is director emeritus of the Institute of Chemical Biology, University of San Francisco, Harvey Science Center. Theodore D. Sterling is from the Computing Science Program, Simon Fraser University. Also we have Edwin R. Fisher of the Shadyside Hospital Pathology Laboratory. And, lastly, we have Sheldon Sommers, of the Lenox Hill Hospital, N.Y.

I would like to welcome you to our hearing today and have you come forward. Gentlemen, your prepared statements will be made part of the record in full.

What we would like to ask of you is to summarize your statement in around 5 minutes so we can have an opportunity for questions and answers.

Dr. Furst, why don't we start with you.

STATEMENTS OF SHELDON C. SOMMERS, M.D., NEW YORK CITY, N.Y.; ARTHUR FURST, PH. D., DIRECTOR EMERITUS, INSTITUTE OF CHEMICAL BIOLOGY, UNIVERSITY OF SAN FRANCISCO; THEODORE D. STERLING, RESEARCH PROFESSOR, SIMON FRASER UNIVERSITY; AND EDWIN R. FISHER, M.D., PITTSBURGH, PA.

Dr. **Sommers**. It is my understanding that I am to speak first, if I may.

Mr. **Waxman**. If you have worked out any arrangement, that is fine with us. Dr. Sommers, please proceed.

Dr. **Sommers**. I am Sheldon Sommers, M.D., a physician specializing in pathology, currently clinical professor of pathology at Columbia University College of Physicians & Surgeons, New York, N.Y., and University of Southern California School of Medicine, Los Angeles, Calif. Also, I am consultant in pathology, Lenox Hill Hospital, N.Y.; chairman, New York State Mental Hygiene Medical Review Board; and president-elect, Arthur Purdy Stout Society of Surgical Pathologists.

I am past president of the New England Pathological Society and New York Pathological Society.

Since 1936, except for World War II years, I have been engaged in medical research with particular reference to cancer, endocrine and gastrointestinal diseases, with over 300 publications—about 10 percent dealing with lung cancer, and also some on pancreatic cancer. I am coeditor of Pathology Annual and Diagnostic Gynecology & Obstetrics and serve on the editorial boards of five other medical journals. My curriculum vitae and publication list are attached.

For the past 6 months, I have served as scientific director, Council for Tobacco Research USA, Inc. This is a funding agency for biomedical research in the area of smoking and health, funded by tobacco manufacturers. The budget for research grants in 1982 is $7 million.

Applications are acted upon by a Scientific Advisory Board, and those approved with a favorable rating are funded for up to 3 years with an opportunity for continuation grants thereafter. The Council for Tobacco Research exerts no influence upon the grantees, who may freely publish what they find as they choose. About 80 active grants now exist in the United States and abroad.

My appearance at this hearing is voluntary, and the opinions expressed are personal, not representing those of any organization. They are the result of over 45 years of study, investigation and practice in the field of pathology and clinical-pathologic correlations of diseases, some of which have been attributed to cigarette smoking.

One approach to cancer causation investigation is epidemiological and statistical. Epidemiological statistics involves an experimental group and a control group. For a valid comparison the groups must be alike as nearly as possible in all respects except for the item being investigated.

In studies of cigarette smoking, matching smokers and non-smokers by sex and age was achieved. It has been assumed in all other respects the two groups were comparable. This is not true since in body build, extroversion or introversion, marital history, alcohol use, use of non prescription medications, police records, military records and other aspects, cigarette smokers are demonstrably different from nonsmokers.

The fallacy of one-to-one comparisons of smokers and non-smokers with respect to mortality was pointed out in a monograph by Rose and Bell in 1971. They studied predictors of longevity in war veterans in Boston reexamined at intervals. One-on-one comparisons placed cigarette smoking No. 1 as a predictor of early death like many other studies. Multifactorial statistical analysis dropped smoking to somewhere below No. 30 as a predictor and dissatisfaction with job became No. 1. The lesson is that in the present relatively undeveloped state of epimiology, to beware of facile and sweeping conclusions.

Two other points about statistical epidemiology. Every textbook states them, every active scientist knows them. Epidemiologic studies by the nature of the mathematics so far developed deal mainly with random populations but smokers are self-selected as are nonsmokers. Comparisons of selected populations using mathematics, valid only for random populations, cannot be expected to provide valid answers.

Second, epidemiology cannot prove cause and effect. All it can demonstrate is a relationship; the nature of the relationship, causal or otherwise has to be worked out by other methods, usually experimental.

The Council of Tobacco Research in 1970 undertook a large scale research program to investigate whether cigarette smoking causes lung cancer in animals. Almost $14 million went into the project in 12 years. To take account of heredity, inbred mice were used and tested for and vaccinated against respiratory viruses. To show these animals could develop the major types of human lung cancers, pure chemical carcinogens were introduced down their tracheas. They were known to metabolize these carcinogens into the biologically active forms. About 20 percent in younger mice and over 95 percent in older mice developed "human-type" lung cancers as a result of exposures to these pure chemical carcinogens.

Thereafter thousands of mice were exposed daily to fresh whole cigarette smoke of either low nicotine and high tar or high nicotine and high tar content up to maximum tolerance during their whole lives, up to 40 months in some cases. At one point there were 11,000 animal manipulations per day including sham smoking and control mice. After all these years of cigarette smoking practically zero lung cancers developed and not one case of the human type cancer most often blamed on smoking.

There was no question the cigarette smoke had penetrated into their lungs since this was worked out quantitatively. In other experiments mice were primed with intratracheal pure carcinogenic chemicals, then exposed to cigarette smoke during their whole lives. No increase in lung cancer occurred over the incidence found after using pure chemicals alone and in one experiment smoking was associated with a reduced lung cancer rate.

The number of animals and computerized information are so abundant that statistical analysis by modern experimental analysis is still continuing. Some 40 publications have in part already appeared or are in part in prospect. In the field of science knowledge is gained through experiment and interpretation. In the scientific method a theory is proposed. Thereafter experiments confirm or refute it.

If the latter, a new theory is developed. It is a continuous evolutionary process and needs a critical and open mind. One must be constantly alert for surprises as Louis Thomas has written. Lung cancer is high on the list of statements in the bill H.R. 5653 attributing diseases to cigarette smoking. There are two general methods of investigating the cause of cancers in humans or animals. One is the epidemiologic and statistical method already discussed. The second is the biomedical method. Cause might be defined biologically as something both necessary and sufficient to cause a condition.

Cigarette smoking is not a necessary factor in human lung cancer which existed for centuries in radium miners before cigarettes were invented. Lung cancer accompanies scarring processes in the lung due to TB, connective tissue diseases and various other abnormalities in nonsmokers.

It also fails to meet the causal criterion of being sufficient. The fact is that the vast majority of smokers, more than 90 percent of even heavy smokers do not develop lung cancer. Hence, cigarette smoking is neither necessary nor sufficent in the development of human lung cancer and by the biological definition is not the cause. Like many other diseases of older age lung cancer appears to be multifactorial which means the disease is associated with many things in addition to smoking.

Practically all active researchers now agree on this point. Factors include No. 1, heredity. Families with a high incidence of lung cancer are known. Sex and race. Men have three times the lung cancer of women; blacks and orientals differ from whites in incidence. Urban. Certain urban areas have high lung cancer rates which can't be accounted for by smoking. These areas are characterized by in some cases severe winter weather inversion patterns with high air pollution. No. 4, occupation. As already noted some 20 occupations involve increased risk. Some workers smoke, others do not. Immune competence. Individuals with demonstrably reduced immunity have developed lung cancer. This may explain some familial cases and increase of cancer with age.

Six, hormones. Hormones accelerate some metabolic processes leading to human lung cancer. Seven, aging, the mean age of lung cancer diagnosis has been reported as about 67 years and said to be rising to older ages in some populations. Currently researchers do not know which if any of these or other factors play a role in the causation of lung cancer.

In summary, a massive experiment to demonstrate that cigarette smoking can cause lung cancer in animals has proved negative. One knows how important an experimental model is in cancer research from the excitement that attended the claims years ago that cancers of lung or larynx had been produced by cigarette smoke in animals.

However, no model so far developed withstands an objective analysis of the pathology of the alleged cancers. Lung cancer like many other human cancers remains a major biological mystery. Epidemiologic studies report a statistical association between cigarette smoking and lung cancer. However, the biomedical experimentation does not support the smoking causation hypothesis.

[Dr. Sommers' prepared statement follows:]

STATEMENT OF SHELDON C. SOMMERS, M.D.

I am Sheldon C. Sommers, M.D., a physician specializing in pathology, currently Clinical Professor of Pathology at Columbia University College of Physicians & Surgeons, New York, N.Y., and University of Southern California School of Medicine, Los Angeles, California. Also I am consultant in pathology, Lenox Hill Hospital, New York; Chairman, New York State Mental Hygiene Medical Review Board; and President-Elect, Arthur Purdy Stout Society of Surgical Pathologists. I am past president of the New England Pathological Society and New York Pathological Society.

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My appearance at this hearing is voluntary, and the opinions expressed are personal, not representing those of any organization. They are the result of over 45 years of study, investigation and practice in the field of pathology and clinical-pathologic correlations of diseases, some of which have been attributed to cigarette smoking.

In the field of science, knowledge is gained through experiment and interpretation, the scientific method. A theory is proposed. Thereafter, experiments confirm or refute it. If the latter, a new theory is developed. It is a continuous evolutionary process, and needs a critical and open mind. One must be constantly alert for surprises, as Lewis Thomas wrote.

Lung cancer is high in the list of statements in Bill HR 4957 attributing diseases to cigarette smoking. There are two general methods of investigating the cause of cancers in humans or animals. One is the biomedical method. Cause might be defined biologically as something both necessary and sufficient to cause a condition. Cigarette smoking is not a necessary factor in human lung cancer, which existed for centuries in radium miners before cigarettes were invented. Lung cancer accompanies scarring processes in the lung due to TB, connective tissue diseases and various other abnormalities in nonsmokers.

Also, cigarette smoking fails to meet the causal criterion of being sufficient. The fact is that the vast majority of smokers, more than 90% of even heavy smokers, do not develop lung cancer. Hence cigarette smoking is neither necessary nor sufficient in the development of human lung cancer, and by the biological definition is not the cause.

Like many other diseases of older age, lung cancer appears to be multifactorial, which means the disease is associated with many things, in addition to smoking. Practically all active researchers now agree on this point. These include:

(1) Heredity. Families with lung cancer are known. Other families have decreased lung function.

(2) Sex and Race. Men have three to six times more lung cancer than women. Blacks and orientals differ from whites in incidence.

(3) Urban. Certain urban areas have high lung cancer rates which cannot be accounted for by smoking. These areas are characterized by severe winter weather inversion patterns with high air pollution.

(4) Occupation. As already noted, some twenty occupations involve increased risk. Some workers smoke while others do not.

(5) Immune competence. Individuals with demonstrably reduced immunity have developed lung cancer. This may explain some family cases, and the increase of cancer with age.

(6) Hormones. Adrenal and sex hormones accelerate some metabolic processes leading to human lung cancer.

(7) Aging. The mean age of lung cancer diagnosis has been reported as about 67 years, and said to be rising to older ages in some populations.

Currently, researchers do not know which, if any, of these or other factors play a role in the causation of lung cancer.

The otner approach to cancer causation investigation is epidemiologic and statistical.

Edpidemiologic statistics involves an experimental group and a control group. For a valid comparison, the groups must be alike as nearly as possible in all respects except for the item being investigated. In studies of cigarette smoking, matching smokers and nonsmokers by sex and age was achieved, and it has been assumed that in all other respects the two groups were comparable. This is not true, since in body build, extroversion-introversion, marital history, alcohol use, use of nonprescription medications, police records, military records and other aspects, cigarette smokers are demonstrably different from nonsmokers.

The fallacy of a one-to-one comparison of smokers and nonsmokers with respect to mortality was pointed out in a monograph by Rose and Bell in 1971. They studied predictors of longevity in war veterans from Boston, re-examined at intervals. One-on-one comparisons placed cigarette smoking #1 as a predictor of early death, like many other studies. Multifactorial statistical analysis dropped smoking to somewhere below #30 as a predictor, and "dissatisfaction with job" became #1. The lesson is that in the present relatively undeveloped state of epidemiology to beware of facile and sweeping conclusions.

Where do the data on deaths from lung cancer and other conditions come from? The diagnoses are largely from death certificates. Most are not supported by autopsy examinations. A death certificate is an authorization for burial not requiring permission of the coroner or medical examiner. It is a legal but not a scientific document. When death certificate diagnoses are compared to autopsy diagnoses of lung cancer, errors in the death certificates have been found to range from 30 to 60 percent. New studies in the U.S. and other countries in the past two years again show this large error.

The basic data for lung cancer incidence thus are of poor quality and uncertain verification. The problem is getting worse since the ACS dropped their requirement for accreditation of hospitals to have 20% minimum autopsies. All pathologists have noted a decline by half or two-thirds of U.S. autopsies. Soon we may have so few that new diseases like legionnaires' disease cannot be effectively investigated. Recall that legionnaires' disease was blamed on cigarettes among other things, and that it was community hospital routine autopsies which permitted identification of the responsible organism.

Beside the inadequate epidemiologic matching and the defective lung cancer data from death certificates, one other event has occurred which bears upon the annual quantification of lung cancer. The rules have been changed.

In the revision of the International Causes of Death, 8th edition, called ICD-8 to ICD-9, for reporting mortality the two rubrics: Primary Lung Cancer and Lung Cancer Not Otherwise Specified (NOS) were for the first time combined. Lung cancer NOS could begin in lung or have spread to lung from many different body sites. Lung metastases are among the three most common locations for all major internal cancers. What in essence ICD-9 did was to guarantee a continued increase in the reported lung cancer mortality, conveniently disregarding that half or more of these cancers began elsewhere in the body and spread to the lungs.

Two last points about statistical epidemiology. Every textbook states them. Every active scientist knows them. Epidemiologic studies by the nature of the mathematics so far developed deal mainly with random popoulations. But smokers are self selected, as are nonsmokers. Comparisons of selected populations using mathematics valid only for random populations cannot be expected to provide valid answers.

Second, epidemiology cannot prove cause and effect. All it can demonstrate is a relationship. The nature of the relationship, causal or otherwise, has to be worked out by other methods, usually experimental.

The CTR in 1970 undertook a large scale research program to investigate whether cigarette smoking causes lung cancer in animals. Almost 14 million dollars went into the project in twelve years. To take account of heredity, inbred mice were used, and they were tested for and vaccinated against respiratory viruses. To show that these animals could develop the major types of human lung cancer, pure chemical carcinogens were introduced down their tracheas. Biochemically, these particular mice were known to metabolize these carcinogens into the biologically active forms. About 20% developed "human type" lung cancers as a result of exposure to these pure chemical carcinogens.

Thereafter, thousands of mice were exposed daily to fresh whole cigarette smoke of either low nicotine and high tar or high nicotine and high tar content up to maximum tolerance during their whole lives, up to 40 months in some cases. At one point, there were 11,000 animal manipulations per day, including sham smoking and control mice. After all these years of cigarette smoke exposure, practically zero lung cancers developed, and not one case of squamous cell carcinoma, the human cancer most often blamed on smoking. There was no question that the cigarette smoke had penetrated into their lungs, since this was worked out quantitatively.

In other experiments, mice were primed with intratracheal pure carcinogenic chemicals and then exposed to cigarette smoke during their whole lives. No increase in lung cancer occurred over the incidence found after using pure chemicals alone, and in one experiment the smoking was associated with a reduced lung cancer rate. The numbers of animals and the computerized information are so abundant that statistical analysis by modern experimental methods is still continuing. Some 40 publications have in part already appeared or are in prospect.

In summary, a massive experiment to demonstrate that cigarette smoking can cause lung cancer in animals has proved negative. One knows how important an experimental model is in cancer research from the excitement that attended the claims years ago that cancers of lung or larynx had been produced by cigarette smoke in animals. However, no model so far developed withstands an objective analysis of the pathology of the alleged cancers.

In summary, lung cancer, like many other human cancers, remains a major biological mystery. Epidemiologic studies report a statistical association between cigarette smoking and lung cancer. However, the biomedical experimentation does not support the smoking causation hypothesis.

Mr. WAXMAN. Thank you, Dr. Sommers. Have you worked out who will speak next?

Dr. Furst.

STATEMENT OF ARTHUR FURST, PH. D.

Dr. FURST. My statement is on file with you, but I am going to abbreviate the statement to save some time.

As a resident of California since 1919 and as director emeritus of the Institute of Chemical Biology at the University of San Francisco, I applaud Congressman Waxman's continuing efforts to improve the health of the American people. His concern is certainly appreciated. I question, however, the scientific basis of his proposal—H.R. 4957—to amend the Public Health Service Act and the Federal Cigarette Labeling and Advertising Act. I would therefore like to submit a full written statement for this subcommittee's consideration.

I have read H.R. 4957 with great interest, for I have spent over 30 years in scientific research, much of it studying the questions of smoking and health. My original laboratory work on carcinogenesis antedates the first Surgeon General's Report on Smoking and Health.

Over the years, I have studied the possible effects on animals of both whole smoke and various smoke components. I have also investigated the carcinogenicity of a wide variety of substances, particularly the heavy metals, and I have carefully monitored the world literature on experimental carcinogenesis. Perhaps this background will help explain my concerns about H.R. 4957, which makes such flat, dogmatic statements about a scientific area which I know to be fraught with uncertainties.

A congressional finding that "cigarette smoking is the number one cause of lung cancer" implies a scientific certainty that I, as scientist, believe to be unwarranted. My skepticism arises primarily from my extensive knowledge of and first-hand experience with animal experiments on tobacco smoke and lung cancer.

For many years, I tried to induce lung cancer in animals with cigarette smoke, with no success, despite the most sophisticated smoking machines available. Not only were my colleagues and I unsuccessful, but so was every other investigator.

There have been a very small number of published reports of lung cancers occurring in experimental animals during smoke inhalation experiments. Anyone attempting to interpret these as showing that smoking causes lung cancer must understand that animals, like humans, do spontaneously develop lung cancer even in the absence of any suspected carcinogen.

Moreover, the design and conduct of meaningful animal experimentation require a great deal of sophistication. I have reviewed a vast number of research proposals and reports in the past 30 years, and I can assure you that a large number of the experimental designs or the conclusions drawn from the experimental data do not stand up to rigorous scientific scrutiny. One of the simplest requirements that is often overlooked is the need to select from litter mates the controls and the experimental animals. Even with exactly the same strain of mice, the animals' spontaneous rate of tumor appearance will vary from one supplier to another; this can cause serious problems with the interpretation of the data. Thus, even if positive results are obtained in one experiment, a replication using animals from a different litter may yield nothing unusual.

Based on my own research and familiarity with the literature, I have concluded that no reliable, reproducible animal studies have shown that the inhalation of cigarette smoke causes lung cancer. I might add that skin-painting experiments are inappropriate for studying the question of tobacco smoke and cancer. We must insist that animal experiments simulate, as closely as possible, the human experience—and skin-painting, as well as certain other experimental techniques, fail to mimic adequately human inhalation.

The animal data are significant negative evidence. They basically contradict the popular interpretation of the epidemiological data. Why? We must have good research to find out.

I heartily agree with the recommendation that more research must be funded and conducted. Yet, I must emphasize that negative results can also be very important. Scientific knowledge—in this case, of lung cancer causation—advances only by publication of both successes and failures. This is why I have been troubled that so little information is given in the reports by the Surgeon General about the negative experimental results in the lung cancer area.

Yes, the requirement that the Office of Smoking and Health "collect, analyze, and disseminate" smoking and health information is excellent if both positive and negative findings are reported. Only with this unbiased approach can the needs of both science and the public in general be met. I feel compelled to say that the past performance by official agencies has been characterized by highly selective reporting.

I am not criticizing the Surgeon General personally. I do feel however, that his consultants, who I am sure were motivated by good intentions, did not feel it necessary to be absolutely complete.

I am not in any way advocating smoking; as a scientist, I am concerned with presenting the best information to the public, both positive and negative. I am also very concerned that if all the diseases noted in this bill are assigned by Federal law to smoking, there will be a severe decline in research on and attempted control of many known or suspected environmental causes of disease.

For example, this Federal law can only have an adverse effect on efforts to clean up our environment, to continue smog controls in cars, and to remove the particulates and noxious gases in the atmosphere.

I respectfully suggest that Congress should encourage good research; I have been advocating this for 30 years. If we had received adequate funding of good research years ago, then many of the questions raised today might have been answered. Science, not publicity campaigns, will solve our problems.

[Dr. Furst's prepared statement follows:]

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STATEMENT OF ARTHUR FURST, Ph.D.

As a citizen and a resident of California since 1919, I applaud Congressman Waxman's continuing efforts to improve the health of the American people. His concern is certainly appreciated. I question, however, the scientific basis of his proposal (H.R. 4957) to amend the Public Health Service Act and the Federal Cigarette Labeling and Advertising Act.

As the attached copy of my curriculum vitae shows, I hold the only Distinguished University Professorship (Emeritus) at the University of San Francisco. I am the Director (Emeritus) of the Institute of Chemical Biology (USF), and I have been a professor of pharmacology at Stanford University School of Medicine and a (visiting) clinical professor of pathology at the College of Physicians and Surgeons of Columbia University. I am listed in *Who's Who in the World* and *World Who's Who in Science*. I am a consultant (temporary) to the World Health Organization. In fact, I was a member of the international working group that wrote IARC Monographs Volume 2 and 23 on *Evaluation of the Carcinogenic Risk of Chemicals to Humans*. I am currently organizing an international conference on the toxicity and reproductive hazards of heavy metals. I also consult frequently with governmental agencies and private industries on a variety of environmental health problems.

I have read H.R. 4957 with great interest, for I have spent over thirty years in scientific research, much of it studying the questions of smoking and health. My original laboratory work on carcinogenesis antedates the first Surgeon General's Report on Smoking and Health. Over the years, I have studied the possible effects on animals of both whole smoke and various smoke components. I have also investigated the carcinogenicity of a wide variety of substances, particularly the heavy metals, and I have carefully

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monitored the world literature on experimental carcinogenesis. Perhaps this background will help explain my concerns about H.R. 4957, which makes such flat, dogmatic statements about a scientific area which I know to be fraught with uncertainties.

A Congressional finding that "cigarette smoking is the number one cause of lung cancer" implies a scientific certainty that I, as a scientist, believe to be unwarranted. My skepticism arises primarily from my extensive knowledge of and first-hand experience with animal experiments on tobacco smoke and lung cancer.

For many years, I tried to induce lung cancer in animals with cigarette smoke, with no success, despite the most sophisticated smoking machines available. Not only were my colleagues and I unsuccessful, but every other investigator who attempted to induce lung cancer in animals by inhalation of fresh smoke also failed.

There have been a very small number of published reports of lung cancers occurring in experimental animals during smoke inhalation experiments. Anyone attempting to interpret these as showing that smoking causes lung cancer must understand that animals, like humans, do spontaneously develop lung cancer even in the absence of any suspected carcinogen. The key question that an investigator must ask himself is whether any cancers that develop in his animals are actually a result of the experimental exposure. For example, rodents have a fairly high spontaneous rate of adenocarcinoma (malignant tumors) and adenoma (nonmalignant tumors) development. I have examined the data on the reports of increased adenocarcinoma in smoke-exposed animals and have found no difference between the incidence reported in the experimental animals and the normal baseline, spontaneous rate.

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The lung cancer cell type traditionally associated with human smoking is squamous cell carcinoma. The spontaneous rate of this cancer is considerably lower than that of adenocarcinoma in rodents, but it too does occur naturally in these animals. There have been very few reports of a squamous cell cancer in smoke-exposed animals, and generally the authors made no comment on these findings. I assume that they concur with me that they were seeing nothing more than spontaneous production.

One of the animal experiments that has received the most attention is that on beagle dogs conducted by Auerbach et al. Twelve years ago, they claimed to have succeeded in producing lung cancer in their beagles, but because their experimental methods were seriously flawed, I consider their conclusions to be unfounded. Because the Auerbach experiment occasionally resurfaces as virtually the only example of a positive inhalational study result, I feel compelled to repeat some of the criticisms of that study that I voiced in 1972. Any time this experiment is praised, there seems to be no emphasis on the fact that the dogs received the smoke through a tracheostoma. This in no way resembles human smoking. Unless the pictures I have seen are wrong, the smoke was initially forced into the lungs through the trachea by use of a pump! This was without regard to the normal respiration rate of the dogs. Further, several of the dogs died from infections, aspiration of foreign material, etc., which is unusual in a well controlled experiment. This experiment has no meaningful relationship to the human experience, and any reports of tumors should be considered in light of the fact that the experimental data were not made available to an independent panel for evaluation, as requested. Also, since beagle dogs do get lung cancer spontaneously, a discussion of this fact would have been useful to readers interested in evaluating the Auerbach work.

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The design and conduct of meaningful animal experimentation require a great deal of sophistication. I have reviewed a vast number of research proposals and reports in the past 30 years, and I can assure you that a large number of the experimental designs or the conclusions drawn from the experimental data do not stand up to rigorous scientific scrutiny. One of the simplest requirements that is often overlooked is the need to select from litter mates the controls and the experimental animals. Even with exactly the same strain of mice, the animals' spontaneous rate of tumor appearance will vary from one supplier to another; this can cause serious problems with the interpretation of the data. Thus, even if positive results are obtained in one experiment, a replication using animals from a different litter may yield nothing unusual.

It is also extremely important to use "clean" animals. Parasites or infectious diseases in the animals can seriously affect experimental results, even if the animals are successfully treated before the experiment begins. For example, we can't be sure what effect the parasite infestation in Dontenwill's Syrian Golden hamsters had on his inhalation study results. Similarly, the possibility that Auerbach's beagles had lung worms causes concern. In my own work, I always try to avoid using unclean animals by checking them very carefully before beginning an experiment. If I discover later that my animals are not clean, I terminate the experiment and start again with new animals. That is the only way that I can feel certain that the infestation or infection will not affect the experimental findings.

In summary, based on my own research and familiarity with the literature, I have concluded that no reliable, reproducible animal studies have shown that the inhalation of cigarette smoke causes lung cancer. I might add that skin-painting experiments are inappropriate for studying the question

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of tobacco smoke and cancer. We must insist that animal experiments simulate, as closely as possible, the human experience — and skin-painting, as well as certain other experimental techniques, fail to mimic adequately human inhalation.

Various groups convinced of smoking's causal role in lung cancer development have attempted to ignore or explain away the negative results in animal inhalation studies. For example, I was once challenged in a scientific meeting about the mice I used in my smoke inhalation studies. The individual argued that this strain could not develop lung cancer, and that is why I failed. But this is not true, because we have documented well the production of lung cancer in these animals. Over a period of years we published a series of papers describing our technique of instilling carcinogens in the lungs of mice, the sensitivity of various strains of mice to carcinogens, and the responses of the animals to different hydrocarbons. Yes, development of all histological types of lung cancer is common in animals treated with various carcinogens. It is even possible to rate experimentally the potency of carcinogens as inducers of lung cancer.

In experimental carcinogenesis, replication by independent investigators is essential to establish the validity of the findings. Other researchers have been successful in replicating my experimental production of lung cancers. For example, in the latest issue of Cancer Research (vol. 41), Henry, et al., published a complete confirmation of my research. They used the same technique, strain of mouse, chemical, and reported the same time of lung cancer appearance. It is in this context of successful lung cancer induction techniques that the failures of smoke inhalation studies should be judged.

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In general, the major health claims against cigarette smoking are based mainly on epidemiological studies. From the standpoint of science, epidemiological studies can only point out statistical associations between a factor (such as smoking) and disease; they cannot prove a causal relationship. Yet, the findings in H.R. 4957 are stated as causal relationships, as though all is proven. Thus, as a scientist with over 30 years experience in laboratory research, I must disagree with those findings on the grounds that they are overstatements of the scientific knowledge — all is not proven in the smoking and health area.

I heartily agree with the recommendation that more research must be funded and conducted. Yet, I must emphasize that negative results can also be very important. Scientific knowledge (in this case, of lung cancer causation) advances only by publication of both successes and failures. This is why I have been troubled that so little information is given in the reports by the Surgeon General about the negative experimental results in the lung cancer area. A case in point is Dr. A. Wehner's work which showed that hamsters, as a result of their exposure to cigarette smoke, not only failed to develop lung cancer, but also lived longer! Yes, the requirement that the Office on Smoking and Health "collect, analyze, and disseminate" smoking and health information is excellent if both positive and negative findings will be reported. Only with this unbiased approach can the needs of both science and the public in general be met. I feel compelled to say that past performance by official agencies has been characterized by highly selective reporting.

I am particularly disturbed by the latest (1982) Report of the Surgeon General Health Consequences of Smoking. Like so many of its predecessors, it often omits references to material contradictory to the positions it has adopted. Why the omissions? Why should a government

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document selectively present only that part of the evidence that supports its position?

In general, this Report provides no new information that would make me change my mind about the lack of good scientific information on smoking and health.

I agree with the Report's recommendation that major research efforts should be devoted to elucidating the mechanisms of lung cancer development. At this point, we have a number of theories, not proof, and in many instances not very good theories.

The writers of the Report assume that the case against cigarette smoking is proven, and that the lack of knowledge about the mechanisms involved is only the finishing touch — not really essential to prove the point. I cannot disagree more strongly. Unlike the writers of the Surgeon General's Report, I believe that until we have that proof, any conclusions regarding causation are premature.

I disagree with the Report's discussion of the animal inhalation experiments using Syrian golden hamsters (many of them conducted by Dontenwill, et al.) A summary section of the Report says that "studies on smoke inhalation with the hamster now appear suitable" for evaluating the "tumorigenic potential" of cigarette smoke. This seems highly incompatible with the Report's earlier comment that "why these inhalation experiments with hamsters did not induce carcinoma of the lung remains to be elucidated." Lung cancer can be induced in hamsters, by using a variety of substances. Also, significant amounts of cigarette smoke do reach the hamsters' lungs. So why don't the hamsters get lung cancer after exposure to tobacco smoke?

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The 1982 Report concludes that inhalation studies have basically failed to induce lung cancer in animals, but then it recommends that further research efforts in this area should receive limited priority. I find that incomprehensible. The animal data are significant negative evidence. They basically contradict the popular interpretation of the epidemiological data. Why? We must have good research to find out.

I am not in any way advocating smoking; as a scientist, I am concerned with presenting the best information to the public, both positive and negative. I am also very concerned that if all the diseases noted in this bill are assigned by federal law to smoking, there will be a severe decline in research on and attempted control of many known or suspected environmental causes of disease. For example, this federal law can only have an adverse effect on efforts to clean up our environment, to continue smog controls in cars, and to remove the particulates and noxious gases in the atmosphere.

I have lectured throughout California in programs on the Biology of Cancer sponsored by the American Cancer Society. Such contact has led me to believe that the public is well informed on what the preamble in H.R. 4957 refers to as the "dangers of smoking." Every package of cigarettes, every magazine ad, and every billboard ad carries the Surgeon General's warning. Furthermore, the American Lung Association, the American Cancer Society, and the March of Dimes are continually funding radio and TV announcements against smoking.

I cannot agree, therefore, with this legislative requirement that the government spend even more time and effort to inform the public as though they are ignorant of all the warnings that have been broadcast over the past nearly 20 years. It seems to me that the public is indeed well informed, and that perhaps they have simply decided that they wish to make their own decision. I would prefer to have these millions of dollars spent on good research, and not on more publicity campaigns.

Again, I respectfully suggest that Congress should encourage good research; I have been advocating this for 30 years. If we had received adequate funding of good research years ago, then many of the questions raised today might have been answered. Science, not publicity campaigns, will solve our problems.

Mr. **Waxman**. Thank you, Dr. Furst.
Dr. Sterling.

STATEMENT OF THEODORE D. STERLING

Mr. **Sterling**. Mr. Chairman, members of the panel, thank you for the courtesy in receiving my contribution. I am Theodore Sterling, university research professor at Simon Fraser University in British Columbia. I have previously taught at several universities in the United States. I have served as an adviser to the U.S. Food and Drug Administration, the Federal Trade Commission, the National Science Foundation, the National Security Agency, National Academy of Sciences, the Veterans' Administration, and to several U.S. and Canadian labor unions.

I have been elected a fellow of the American Association for the Advancement of Science and of the American Statistical Association. My major professional work concerns the collection and analysis of scientific data from experiments and from survey studies. Much of my research has centered on learning about the effects of environmental exposures on the health of many.

I am opposed to the bill under discussion today because I believe its far-reaching "findings" do not have adequate scientific support. Further, if this bill becomes law, it could unreasonably divert attention and resources away from crucially important areas of public health research.

My interest in the possible health effects of cigarette smoking goes back to the late 1950's. Since then, in a number of published articles, I have expressed my concern that many smoking and health studies have taken approaches which have oversimplified what in reality is an extremely complex problem.

The bulk of the data on smoking and health has come from studies of population groups; that is, from epidemiological studies. These data have been analyzed using statistical methods to determine whether there are associations between certain factors and disease end-points.

As a statistician, I am frequently astonished to see how many people, even many who should know better, treat statistical associations as proof of cause-and-effect relationships. The findings in the act being discussed today seem to be a perfect example of this misuse of statistics.

In my written statement, which I understand has been submitted for the record, I have described my published critiques of smoking and health studies. Briefly, I have evaluated in depth two of the major prospective mortality studies—the American Cancer Society's "Million Persons" study and the U.S. veterans study—and I have found that both of these studies had major methodological flaws which may well invalidate their widely quoted conclusions.

Smoking has also been statistically linked with "excess" illness and disability. I have re-analyzed the data on which this claim is said to be based and I have found that they may not, in fact, warrant this conclusion.

Further, I contend that smoking and health studies have for the most part ignored possible confounding factors. Modern society has created a multitude of sources for toxic airborne particles and fumes. These are as different as the vinyl cover of a sofa, the kitchen gas stove, the heating air duct, the automobile tail pipe, and the huge smokestacks of a steel mill. But nowhere are people exposed to such high concentrations of fumes and dusts as they are in the industrial workplace.

Yet, there has been comparatively little effort to collect and analyze data on occupational exposures. For example, even in 1982, I know of only one cancer registry that collects appropriate detailed information on lifetime work exposures among all the many cancer registries that inquire about the smoking habits of the respiratory cancer cases in their files.

Population studies such as the ACS and veterans studies either did not obtain information on industrial exposures, or, if some limited information was available, it was not subjected to critical analysis.

In my own investigations, I have found that there is a strong tendency for a higher proportion of individuals who do dirty work to smoke, compared to individuals who do clean work. So I have asked: Does smoking kill workers or working kill smokers? It appears to me that the increased incidence of disease, ascribed to smoking by epidemiological studies that fail to control adequately for occupation, could well be due to occupational factors.

In my written statement, I have summarized a number of studies of lung disease in occupationally exposed workers. Some of these have failed to find any significant effect due to cigarette smoking, while others have found even higher disease rates among nonsmokers than among smokers.

Some of my associates and I are currently conducting a study seeking to untangle the possible influences of smoking and exposure to toxic dust and fumes. While the analysis of all our data is not yet complete, it is nevertheless clear that the association previously claimed between smoking and respiratory cancers has been greatly magnified because other factors were not considered.

As humans living in a frighteningly complex world, we grasp with relief at what appear to be simple answers. But the complex facts about the causation of lung disease will remain incomplete if we continue to simplistically blame cigarette smoking and continue to ignore the myriad of environmental agents we all encounter.

I believe that this legislation would add little to present public health efforts; it would merely reinforce the state of imbalance and confusion which now exists in investigations of the health consequences of the microchemical environment.

[Mr. Sterling's prepared statement follows:]

Statement

Professor T. D. Sterling

I am Theodor Sterling, University Research Professor at Simon Fraser University, Burnaby, British Columbia. I have also taught at the following universities: Alabama, Cincinnati, Michigan State, Princeton, and Washington University at St. Louis. I have served as an advisor to the Food and Drug Administration, the Federal Trade Commission, the National Science Foundation, the National Security Agency, the National Academy of Sciences, and the Veterans Administration. I am a Fellow of the American Association for the Advancement of Science and of the American Statistical Association. My major professional work concerns the collection and interpretation of scientific data and the design, execution and analysis of experiments and of survey studies. Much of my research has centered on learning about the effects of environmental exposures on the health of animals and men.

I wish to comment on the proposed Comprehensive Smoking Prevention Education Act of 1981. I am opposed to this proposed legislation because I believe its far-reaching "findings" do not have adequate scientific support. Further, if it becomes law, this Act could unreasonably divert attention and resources away from crucially important areas of public health research.

My comments are based on my analyses of reports of other investigators and my own research efforts in the smoking and health areas.

Smoking and Health Studies

My interest in the possible health effects of cigarette smoking goes back to the late 1950's. In a number of published articles, I have expressed my concern about many smoking and health studies, primarily because the approaches taken have oversimplified what in reality is an extremely complex problem. I have pointed out specific flaws in the design and execution of many of these studies.

The bulk of the data on smoking and health comes from studies of population groups, that is, from epidemiological studies. These data are analyzed using statistical methods to determine whether there are associations between certain factors and disease end-points. As a statistician, I am frequently astonished to see how many people, even many who should know better, treat statistical associations as proof of cause-and-effect relationships. The findings in the proposed Act seem to be a perfect example of this misuse of statistics. Scientists and nonscientists alike must heed the words of a well-known epidemiologist, who very recently said:

> Epidemiological studies, even prospective ones . . ., cannot prove cause-and-effect when the end-point, 'effect', is an outcome of a chronic non-communicable condition.[1]

In order for statistical associations to provide reliable directions for further research, the data from which they are derived must be accurate and these data must be analysed using appropriate methods, taking all possible confounding factors into account. Unfortunately, these scientific standards frequently have not been met in epidemiological studies of smoking and health.

I have evaluated in depth two of the major prospective mortality studies. The largest of these was the "million persons" study conducted by the American Cancer Society (ACS) some years ago. Although one would hope that results from such a large and expensive study would be reliable, after detailed consideration, I find that the conclusions about the possible relationship of smoking and mortality may not be valid because of the biased procedures used to select the population.[2,3]

The data from this large study population were gathered by volunteer workers, and it appears that many of the volunteers had preconceived views on smoking and disease. In other words, since the purpose of the study was to show a link between smoking and disease, the volunteers would be more likely to choose ill subjects who smoked. Indeed, some of the disease patterns of the ACS population were quite different from those of the U.S. population. For example, the ACS women had twice the percentage of breast cancer deaths and three times the percentage of lung cancer deaths, compared to U.S. females generally. Likewise, the percent of ACS males who died of lung cancer was twice that of all U.S. males. Yet the overall death rate for ACS men was about the same as that for U.S. males and that for ACS women was somewhat lower than that for U.S. women.

The ACS population was also very different from the general U.S. population with respect to age distribution, educational attainment, racial structure and place of residence. It is clear that these one million men and women were not representative of the U.S. population. Certainly, results of the ACS study cannot legitimately be projected to the general population, yet this has been and is still being done. And astonishingly, the ACS has recently announced it will soon begin a second "million persons" study, using the same procedure of subject recruitment by "dedicated" volunteers!

A smaller American mortality study, which is still widely quoted, used information obtained from U.S. veterans. I have extensively re-analyzed these data and have found that approximately twenty-five percent of the subjects had been misclassified with respect to smoking habits.[4] For example, large numbers of misclassifications were made among current smokers of more than one form of tobacco and among all categories of former smokers. These misclassification errors directly affect the number of deaths by smoking classes and number of years at risk used to determine mortality ratios. Thus, it is appropriate to ask whether conclusions based on these extensive misclassifications can possibly be valid. This question is particularly significant since the veterans' data are periodically updated and the results used as further evidence of the adverse health effects of smoking.

As everyone is aware, smoking has also been statistically linked with "excess" morbidity, that is, "excess" illness and disability. I have re-analyzed the data from the Health Interview Survey,[5] on which this claim is said to be based, and I have found that these data may not, in fact, warrant the conclusion that cigarette smoking leads to increased disease and disability.[6] Specifically, I found that female smokers by and large report fewer diseases and disabilities than female non-smokers. Also, moderate smokers, both male and female, very often report the fewest number of diseases and have the lowest prevalence rates even when compared to non-smokers. I did not use special methods to analyze the data to arrive at these conclusions -- these same observations for female smokers and moderate smokers appear clearly in the Tables in the chapter on morbidity in the 1979 Surgeon General's Report on Smoking and Health.[7]

In addition, when I examined the Health Interview Survey methods, I observed that several potential sources of bias were simply ignored. For example, much of the information was obtained from proxy responses, the method used to adjust for age distribution differences between smokers and non-smokers may have been inappropriate, and some known differences between smokers and non-smokers, such as occupation, were not considered.

The following statement, also from the morbidity chapter in the 1979 Surgeon General's Report on Smoking and Health, clearly supports my contention that studies on smoking and health have ignored possible confounding factors.

> Most large scale studies on smoking and health have tended to investigate the role of smoking independently of other behavioral variables, such as alcohol consumption and other life style factors, occupational and environmental hazards, and certain psychological factors. These variables are known to be related to health status and many are also related to smoking habits.[7]

Occupational Exposures and Smoking

For many years, I have been concerned with and have studied in depth the effects of various environmental agents on the health of man. Modern society has created a multitude of sources for toxic airborne particles and fumes. All of us carry an accumulative body burden from by-products of carbonization, from dusts, and from a variety of chemicals and substances which are released into our environment. The sources are as different as the vinyl cover of a sofa, the kitchen gas stove, the heating air duct, the automobile tail pipe, and the huge smokestacks of a steel mill. But nowhere are people exposed to such high concentrations of fumes and toxic dusts as they are in the industrial workplace.

Yet there has been comparatively little effort to collect and analyze data on occupational exposures. For example, as difficult as it may be to believe in 1982, I know of only a single cancer registry that collects appropriate detailed information on occupation and lifetime work exposure among all the many cancer registries that inquire about the smoking habits of the respiratory cancer cases in their files. It was not until 1970 that an institute (NIOSH) to study the diseases of the workplace was established. In the opinion of many, NIOSH was not funded adequately until 1976 -- and even that relatively modest funding was cut again recently. And it was not until 1980 that the American Lung Association convened a special Task Force on Occupational Health.

In contrast, there have been many, many publicly funded studies seeking to associate smoking with disease and simultaneously neglecting the environment of the smoker. Population studies such as the ACS and veterans' studies either did not obtain information on industrial exposures or, if some limited information was available, it was not subjected to critical analysis. Unless we begin to attend to the importance of the workplace and exposures to chemicals in the past, we may deprive ourselves of the ability to take effective measures to prevent the constant increases in respiratory disease rates.

Only recently have studies appeared which have addressed the question of the health experience of special groups of industrial workers. For example, asbestos workers, uranium workers and chemical workers have received attention from epidemiologists. I have observed that even many of these investigators gather data on smoking habits with much more thoroughness than they do data on type and duration of exposures. Their analyses of the observed disease patterns, in my view, place disproportionate emphasis on smoking histories in drawing conclusions.

My own investigations have justified my concern that a narrow focus or smoking has masked the effects of micro-chemical and occupational environments. I have been prompted by my results to ask: does smoking kill workers or working kill smokers?[8] Evidence in support of the latter has been detailed in a paper I presented at the American Lung Association's Occupational Health Task Force Meeting in April, 1980.[9] Here I will briefly summarize that paper.

While there are many reasons for the confusion between the possible effects of smoking and other variables, the major complication arises because the prevalence of smoking is highest among those individuals who are exposed to possible deleterious occupational factors.[10,11] For instance, 71 percent of construction painters are current smokers while only 27 percent of teachers have that habit.[11] In fact, when occupations are arranged by prevalence of smoking, 29 out of 40 occupations in which smoking is most prevalent are also those with high exposure to dusts and fumes, while in only 4 of the 40 occupations with the lowest prevalence of smoking are workers exposed to such hazards.[10]

There is a strong tendency for a higher proportion of individuals who do dirty work to smoke, compared to individuals who do clean work. Thus, in a statistical sense, the category smoker may be primarily an index for worker exposed to occupational hazards. It follows that any comparison between smokers and non-smokers implies a comparison between groups that probably differ significantly in their exposures to dusts and fumes in the workplace. In short, the increased incidence of disease, ascribed to smoking by epidemiological studies that fail to control adequately for occupation, could well be due to occupational factors. Obtaining an accurate occupational history is difficult and time consuming, particularly because important exposures may have occurred twenty or more years ago.

Studies of Industrial Workers

I turn now to a discussion of recent and long overdue studies of lung disease in occupationally exposed workers; some of these have failed to find any significant effect due to cigarette smoking, while others have found even higher disease rates among non-smokers than among smokers.

In a study of zinc and lead miners, Axelson, et al.[12] report a greater risk for lung cancer among non-smokers compared to smokers. Another study of miners' mortality by Dahlgren, reported in 1979, showed that non-smoking miners had a higher mortality from lung cancer than smoking miners.[13] Axelson emphasized that these Swedish studies deal with a lifetime follow-up of miners whereas most other mining populations have been studied by means of cohorts with a follow-up of not more than about 25-30 years or less.[14] In other words, the completeness of the follow-up leads to results with added reliability.

An inverse relationship between smoking and lung cancer was also found among workers exposed to chloromethyl methyl ether.[15] The author, W. Weiss, who is known for his militant opposition to smoking, observed: "The data suggest that continued cigarette smoking entailed a factor which partially inhibited the carcinogenic effects of chloromethyl ethers."

Pinto[16] found elevated lung cancer mortality rates in his study population of arsenic exposed workers, compared to the general population. He commented that these elevated rates were "not due to smoking" in his workers. Further, he reported that the differences between the elevated standard mortality ratios in the three groups (smokers, ex-smokers and non-smokers) were not statistically significant.

A study of chrysotile asbestos miners in Canada[17] reported that "Lung cancer deaths occurred in non-smokers, and showed a greater increase of incidence with increasing exposure than did lung cancer in smokers . . . ." This is one of the very few studies that estimated levels of asbestos dust exposure among the workers.

Some scientists have claimed that occupational exposures and cigarette smoking increase the risk of disease. In fact, Finding (6) of H.R. 4957 accepts this view. The recent studies discussed above do not support this hypothesis. In fact, Axelson and Weiss separately raised the possibility that smoking may have protective properties for some types of work.

The claim of interaction is heard most often regarding asbestos and smoking, but even here the evidence needs to be examined carefully. Although the well known study of insulation workers by Hammond and Selikoff[18,19,20] has indicated an apparently large effect on lung cancer rates due to the claimed interaction of smoking and asbestos, that "effect" has become smaller with successive reports, as increasing numbers of lung cancers occur among non-smoking workers. It is important to note that the latest report by these investigators has shown a five-fold relative risk of lung cancer mortality for smoking and non-smoking workers exposed to asbestos.

In addition, there are serious problems with the Hammond-Selikoff study. For example, there were no smoking histories available for over 6,000 of the 17,800 insulation workers. This prompted a cancer researcher to note ". . . the large fraction of subjects with unknown smoking habits makes uncertain any quantitative assessment of the joint effect of smoking and asbestos."[21] Also, I have pointed out that in these insulation workers, the proportion of deaths due to cancer of all sites was the same for both smokers and non-smokers.[8] Approximately 45% of all deaths were due to cancer in these workers. In contrast, the proportion of expected deaths from cancer (based on age-specific U.S. mortality rates for white males) was only about 18%. These figures strikingly indicate the dangers of asbestos exposure for all workers, whether they smoke or not.

Ongoing Studies

In many of these reported studies, conclusions about the possible relative effects of smoking and occupational exposures were almost an afterthought. There have been few studies designed for the express purpose of evaluating the possible interaction of smoking and occupation. In order to fill that void, a number of associates at the Sinai Hospital in Detroit and the Rhode Island Hospital of Brown University have joined me in a study seeking to untangle the possible influences of the life history of smoking and exposure to toxic dust and fumes on patients in lung, cancer, heart, dental and other hospital services. We have developed a thorough questionnaire and a practical interviewing procedure to determine whether an individual has been exposed to occupational hazards, and the extent of any such exposures.

While the analysis of all our data is not yet complete, it is nevertheless clear that the association previously claimed between smoking and respiratory cancers has been greatly magnified because other factors were not considered. The much-publicized "association" between heart disease and smoking may be similarly exaggerated. Indeed, if our preliminary findings are substantiated when data analysis is complete, the statistical association reported by others between smoking and heart disease may have to be completely re-evaluated.

Conclusions

My purpose here has been to present some results of scientific investigations that are not widely publicized, and to show that an almost exclusive focus on cigarette smoking may have seriously hindered the scientific study of chronic diseases. I believe I have clearly demonstrated that the possible effects of smoking and occupational exposures have not yet been disentangled.

As humans living in a frighteningly complex world, we grasp with relief at what appear to be simple answers. Indeed, the readiness with which the existing evidence has been accepted as demonstrating that cigarette smoking is the major antecedent for lung disease is, perhaps, a most striking example of our desire to keep our world simple and orderly.

Nature, on the other hand, is not concerned with what we believe causes disease, and the real world is not always simple. In the case of lung disease, in fact, it is highly complex. The factual knowledge about the antecedents of lung disease will remain incomplete if we continue to simplistically blame cigarette smoking and continue to ignore the possible effects of the workplace on the health of workers.

I am afraid that the bill under consideration would tend to reinforce what has been the dominant approach of health scientists -- the search for antecedents of disease in the behavior and life-styles of individuals. Attempts are constantly made to link disease to individual habits such as nutrition, exercise or the lack of it, alcohol, and, of course, smoking. For example, the new American Cancer Society study mentioned earlier is targeted on the effects of certain life-style factors on cancer.

In contrast, the idea that the day-to-day environment exerts a major influence on the health of large population groups, although suspected by some, has not been adequately considered. One needs only to recall the criticisms heaped upon Rachel Carson's Silent Spring twenty years ago to realize the truth of this statement. The fact that many people are exposed to substantial concentrations of volatile fumes and toxic dusts, particularly in the workplace, has not received sufficient attention from epidemiologists and public health officials.

In conclusion, I believe that the facts I have presented support my contention that the "findings" in the bill are based on insufficient data. This legislation would add little to present public health efforts; it would merely reinforce the state of imbalance and confusion which now exists in investigations of the health consequences of the micro-chemical environment.

References

1. Keys, A., et al., "The Diet and All-Causes Death Rate in the Seven Countries Study," Lancet II: 58-61, July 11, 1981.

2. Sterling, T., "A Critical Reassessment of the Evidence Bearing on Smoking as the Cause of Lung Cancer," Am J Public Health 65(9): 939-953, September, 1975.

3. Sterling, T., "Statistical Problems in Multi-variate (Etiological) Surveys," Canadian J Stat 7(2): 205-215, 1979.

4. Sterling, T. and J. Weinkam, "What Happens When Major Errors are Discovered Long After an Important Report has Been Published?," Presented at the American Statistical Association Annual Meeting, August 16, 1979.

5. U.S. Public Health Service, "Cigarette Smoking and Health Characteristics, United States -- July 1964-June 1965," Vital and Health Statistics, PHS Publication No. 1000, Series 10, No. 34, Washington, D.C.: U.S. Government Printing Office, 1967.

6. Sterling, T., "A Review of the Claim that Excess Morbidity and Disability Can Be Ascribed to Smoking," J Am Stat Assoc 66(334): 251-257, June, 1971.

7. U.S. Public Health Service, "Chapter 3. Morbidity," Smoking and Health. A Report of the Surgeon General, Department of Health, Education, and Welfare, DHEW Publication No. (PHS) 79-50066, 1979.

8. Sterling, T., "Does Smoking Kill Workers or Working Kill Smokers?," Int J Health Serv 8(3): 437-452, 1978.

9. Sterling, T., "Smoking, Occupation and Respiratory Disease," Presented at the American Lung Association Occupational Health Task Force Meeting, April 9, 1980.

10. Sterling, T. and J. Weinkam, "Smoking Characteristics by Type of Employment," J Occup Med 18(11): 743-754, 1976.

11. Sterling, T. and J. Weinkam, "Smoking Patterns by Occupation, Industry, Sex, and Race," Arch Environ Health 33(6): 313-317, 1978.

12. Axelson, O. and L. Sundell, "Mining, Lung Cancer and Smoking," Scand J Work Environ Health 4: 46-52, 1978.

13. Dahlgren, E., "Lung Cancer, Cardiovascular Disease and Smoking in a Group of Miners," Lakartidningen 76: 4811-4814, 1979.

14. Axelson, O., "Effects of Low Level and Background Radiation from Radon Daughters," Presented at Vancouver, B.C., Royal Commission Hearings, January, 1980.

15. Weiss, W., "The Cigarette Factor in Lung Cancer Due to Chloromethyl Ethers," J Occup Med 22: 527-529, 1980.

16. Pinto, S., et al., "Mortality Experience of Arsenic-exposed Workers," Arch Environ Health 33: 325-331, 1978.

17. McDonald, J., et al., "Dust Exposure and Mortality in Chrysotile Mining, 1910-75," Br J Ind Med 37: 11-24, 1980.

18. Hammond, E. and I. Selikoff, "Relation of Cigarette Smoking to Risk of Death of Asbestos-associated Disease Among Insulation Workers in the United States," Biological Effects of Asbestos, ed. P. Bogovski (Lyon, France: IARC, 1973), pp. 312-317.

19. Selikoff, I. and E. Hammond, "Multiple Risk Factors in Environmental Cancer," Persons at High Risk of Cancer, ed. J. Fraumeni (New York: Academic Press, 1975), pp. 467-483.

20. Hammond, E., et al., "Asbestos Exposure, Cigarette Smoking and Death Rates," Ann NY Acad Sci 330: 473-490, 1979.

21. Saracci, R., "Asbestos and Lung Cancer: An Analysis of the Epidemiological Evidence on the Asbestos-Smoking Interaction," Int J Cancer 20: 323-331, 1977.

Mr. WAXMAN. Thank you very much, Dr. Sterling.
Dr. Fisher.

STATEMENT OF EDWIN FISHER, M.D.

Dr. FISHER. Mr. Chairman, I am Edwin R. Fisher of Pittsburgh, Pa. I am currently professor of pathology at the University of Pittsburgh School of Medicine and director of laboratories at the Shadyside Hospital in Pittsburgh, Pa.

In addition, I am a consultant in pathology at the Veterans' Administration Hospital in Pittsburgh and the Brownsville General Hospital of Brownsville, Pa. I am a 1947 graduate of the University of Pittsburgh School of Medicine. I received postgraduate training at the Cleveland Clinic, Cleveland, Ohio, and the National Institutes of Health, Bethesda, Md.

I was certified by the American Board of Pathology in both anatomic and clinical pathology in 1952. I am a member of the honorary medical society Alpha Omega Alpha and Sigma Xi, the honorary society for scientific advancement.

I was the recipient of the Parke-Davis Award in Experimental Pathology in 1963 and the Man of the Year in Medicine in the city of Pittsburgh in 1966.

I am a member of many scientific societies, including the American Association of Cancer Research and the American Society for the Study of Arteriosclerosis.

I am the author of 490 scientific publications in American and international journals and textbooks.

I have served on the editorial boards of the journal Cancer and of the American Journal of Clinical Pathology as well as the board of scientific directors of Ellis Fishel Cancer Hospital, Columbia, Mo., and the board of reviewers for the American Society of Atherosclerosis and am the project pathologist for the National Surgical Adjuvant, Breast and Colon Projects of the National Cancer Institute.

I should first like to direct my remarks to personally conducted experiments concerning the possible atherogenic effects of nicotine per se. Atherogenesis is the process which results in the disease which we commonly regard as hardening of the arteries, technically called atherosclerosis.

We have also conducted such experiments with actual cigarette smoke which, of course, includes the relationship of carbon monoxide to the atherosclerotic process. Reprints describing these experiments are being submitted as part of this statement.

In these experiments it was clearly demonstrated in the rabbit that realistic doses of either nicotines or cigarette smoke failed to initiate, exacerbate, to otherwise influence the atherogenic process in that species.

You will notice that I used the designation "realistic doses." I think that is very important. There have been some studies which have exhibited minor or questionable changes with the use of an equivalent dose of 600 or more cigarettes a day in man. This is such a large number that I think man would find it difficult to find the time to smoke them.

Another point which I would like to emphasize is this. One could justly say you found nothing in the rabbit, but can the experience in the rabbit apply to man? What the scientific experiment in the laboratory can do is indicate where we should look and perhaps what we should look for in the clinical setting and I might add that this conclusion also rightfully applies to epidemiologic studies. They are not conclusive in themselves.

With these two points in mind, I should like to continue. It might be well to emphasize that there is no pharmacologic or other study of any scientific validity or acceptability to me that indicates that nicotine adversely affects coronary blood flow. Indeed, most of the studies reveal that this agent actually accentuates and enhances coronary blood flow. Accounts relating adverse effects of cigarette smoke on angina patients, that is, persons who suffer chest pain as a result of arteriosclerotic heart disease, should not be interpreted as indicating that cigarette smoke is etiologically related to the arteriosclerotic process.

Of course, there are many things which a person with angina should not be doing. The issue is whether smoking causes the condition which manifests itself as angina. That is arteriosclerosis, and the answer to that is it has not been demonstrated to do so.

Further, it should be noted that the studies which purport to show that smoking already affects persons with angina involved very few patients—less than 10. I submit to you and every scientist in the country that that is not a valid scientific sample upon which to base any conclusions.

I have reviewed the scientific literature on the subject of coronary heart disease and smoking and find other studies which support my experimental work. For example, studies of workers exposed to carbon monoxide over long periods of time find that the exposed workers do not have an increased incidence of atherosclerosis as compared to the general population.

Other studies raise serious questions about the smoking causation hypothesis. For example, as has been mentioned earlier today, studies of twins in Sweden are very illuminating on this subject. When the researchers looked at monozygotic twins, that is, identical twins, they found that there was not an increased rate of coronary heart disease in the smoking twin as compared to the non-smoking twin. This led the researchers to conclude that their studies "can be interpreted as showing that both the development of ischaemic or coronary heart disease and death from it are under a relatively strong genetic influence." A conclusion with which I heartily agree.

Likewise, a 1979 study of cardiovascular disease in Switzerland found that while Swiss women have increased their smoking over the last quarter century, their rate of cardiovascular disease has declined significantly during the same period.

Thus, in conclusion my own experiemental work and review of the scientific literature, and I must add, critical review of the scientific literature, leads me to the conclusion that cigarette smoking has not been scientifically established to be a cause of atherosclerosis, nor has it be found to aid or abet this process,

Thank you very much.

Mr. **Waxman**. Thank you, gentlemen, for your testimony.

Dr. Fisher, do you think we have enough of a scientific basis to even have a warning label or justify the warning label we now require on cigarettes stating that the Surgeon General has determined cigarette smoking is dangerous to your health?

Dr. **Fisher**. I believe that the warning as indicated, I would personally regard as slightly extreme from the scientific standpoint.

I would like it to be stated, may be dangerous to your health. I am willing, however, to accept is dangerous, with my own scientific degree of skepticism. If I had my druthers, I would like to see may be dangerous.

Mr. **Waxman**. Dr. Sommers, what are your views on that? Do you think the present warning label is unwarranted?

Dr. **Sommers**. No, I would agree with Dr. Fisher on that point.

Mr. **Waxman**. Do you think that it would be fair to say that lung cancer may be caused by cigarette smoking?

Dr. **Sommers**. It is a possibility.

Mr. **Waxman**. Dr. Sterling, what do you think about that? Do you think that "smoking cigarettes causes lung cancer," would that be a fair statement to make?

Mr. **Sterling**. I would agree with Dr. Sommers on that.

Mr. **Waxman**. Do you think it is unwarranted to say cigarette smoking may cause death from heart disease, lung cancer or emphysema? Is that a statement you could agree to? How about you, Dr. Fisher.

Dr. **Fisher**. It may, as long as may is underlined. Not as a warning but as a general statement of issue, that it may.

Mr. **Waxman**. Why not as a warning?

Dr. **Fisher**. Or may not.

Mr. **Waxman**. Why not as a warning if you think it is a legitimate statement to make?

Dr. **Fisher**. Well, I think we could therefore run a long list of events that I think we ought to have, you know, saturated fats of warnings, that this may cause heart disease. I think we could run a very long list of events. I think whether one says health, that is even more inclusive than what is proposed by the labels.

Mr. **Waxman**. Do any of you disagree with the proposition that it would be prudent for people to avoid smoking cigarettes in order to avoid the possibility of heart disease, lung disease, emphysema and cancer?

Dr. **Sommers**. Did you say prudent?

Mr. **Waxman**. Yes.

Dr. **Sommers**. Well, I can't completely agree with your statement because prudence involves evaluation of relative risks, and some people are evidently at no risk from disease, and others may be at medium or high risk. To say this generally to all the people makes it appear that they are all at equal risk. This is not the fact.

Mr. **Waxman**. Does it? It seems to me if we had the ability to figure out which people are high risk and which are not, if they were predisposed, we could be more careful about it. But if you don't know whether you are an individual at risk or not at risk, based on some genetic predisposition, wouldn't it be prudent for you not to take a chance?

Dr. **Fisher**. Of course, we are, you know, as humans, at risk for many things, whether we smoke or don't smoke. Indeed we take atherosclerosis, hardening of the arteries. This is a disease that started in the cradle. Ends in the grave.

Mr. **Waxman**. Yes, that is what we are worried about.

Dr. **Fisher**. Now can we identify the risks of those in the cradle? Now it would be very optimum to be able to do that, yes. If we are going to approach it from that standpoint, I can see merit in it, investigation into identifying risks.

Mr. **Sterling**. Mr. Chairman?

Mr. **Waxman**. Do any of you see patients or do you all work on research? Do any of you see patients?

Dr. **Sommers**. I see an occasional patient, yes.

Mr. **Waxman**. What do you recommend to your patients?

Dr. **Sommers**. It depends on why the patient comes to see me.

Mr. **Waxman**. Well, the AMA has a policy statement that doctors should recommend to their patients not to smoke.

Dr. **Sommers**. I am not a member of the AMA.

Mr. **Waxman**. Do you disagree with their positions on medicare?

Dr. **Sommers**. No, I don't disagree with their position, but it in some cases would be well for an individual to smoke. If they have had severe psychic or psychologic problems. In other situations it would be——

Mr. **Waxman**. Do you have any evidence of that?

Dr. **Sommers** [continuing]. Bad for them to smoke. Oh, yes, Dr. Eysenck commented on that. He explained the different groups of smokers, the very nervous persons who find solace in smoking and others.

Mr. **Waxman**. Aren't there other outlets for that than smoking a cigarette and taking the chance you could be one of those genetically disposed people?

Dr. **Sommers**. Yes; for example, going to the doctor is another outlet. But many human beings don't like to go to doctors and they find release and some kind of benefit from smoking. It is their habit.

Mr. **Waxman**. Are those the only two choices?

Dr. **Sommers**. Oh, no, there are many possible choices.

Mr. **Sterling**. Mr. Chairman?

Mr. **Waxman**. Yes, Dr. Sterling.

Mr. **Sterling**. I have come a long way to present work which I think is serious. You are asking me whether it is prudent not to smoke. I would suppose it is prudent to invest wisely. It is prudent not to drive a car. It is prudent not to work in a paint shop. It is prudent not to use solvent without a face mask. But is this really what you are after here, what is prudent in life?

Mr. **Waxman**. Well, it seems to me that if you have the high statistical correlation, people getting those diseases that are so dreaded, that are killers—heart disease, lung disease, and cancer—that if you are running an increased risk of that, there are other ways to learn to relax. There are other ways to handle your personal problems than to smoke a cigarette. It doesn't seem to me that smoking is a rational, prudent thing to do. Yet people do it and they make a decision to continue smoking. But I do not think that in calculating the risks and benefits they could ever come up with a calculation where smoking is more of a benefit than a risk. Do you disagree with that?

Mr. **Sterling**. Mr. Chairman, precisely, and forgive me for seeking another ground for discussion, it is precisely that point to which we could address ourselves with some intelligence.

The reason there is a correlation between smoking and lung cancer in large part is due to the fact that smoking is done by blue-collar workers who work in foundries, do welding, work in paint shops, and so on. These are the people who do a large amount of smoking.

Now, you say to them: "Isn't it prudent that you should give up cigarette smoking?" From my experience I would say to them: "Isn't it prudent that you should give up working in a paint shop?"

Mr. **Waxman**. No, no. I think the question is, Isn't it prudent we ought to require industry to minimize the exposure of their employees to dangerous chemicals that may well cause them to be at greater risk for all these diseases?

Mr. **Sterling**. Absolutely, and I know——

Mr. **Waxman**. This committee is working on a Clean Air Act. We had a discussion earlier this morning. I make the distinction very clearly because whether you smoke or not is a voluntary activity. But breathing air that is polluted and perhaps dangerous is nothing you can choose to do without.

Mr. **Sterling**. That is precisely the level of the evidence we have been talking about—evidence that creates the illusion that lung cancer only befalls those who smoke, because the studies which have examined the antecedents of lung cancer have simply failed for the most part to include questions concerning the occupation of the smoker.

Mr. **Waxman.** How do you explain the fact that people who work in those kinds of high-risk occupations seem to be at greater risk when they also smoke?

Mr. **Sterling.** I refer to this in my testimony. You know, there are a number of studies, some done by people who have been traditionally unfriendly to smoking, such as Dr. Weiss, which have found that in some occupations the prevalence of lung cancer is higher for nonsmokers than for smokers. Yet we fail to find these studies quoted in the general smoking and health literature. I think they are important studies. There are a number of studies from Sweden on miners, there are studies in this country, of chloromethyl methyl ether workers, in which we find this kind of relationship—of a greater prevalence of lung cancer among nonsmokers than smokers—I suppose if I were so inclined, I could make a case that smoking protects the workers. Perhaps it does because of the sputum accumulation due to smoking.

Mr. **Waxman.** Do you have any evidence for that?

Mr. **Sterling.** This hypothesis has been suggested by two very respected investigators, one of whom has been a leader in advocating antismoking legislation, I am referring to Dr. William Weiss who, in his recent reports in the Journal of Occupational Medicine on the increased prevalence of lung cancers among nonsmokers exposed to chloromethyl methyl ether, hypothesized that smoking offered some protection to chloromethyl ether exposure.

The same suggestion was made by Dr. Axelson, chairman of the department of occupational health, in Lindhoeping, Sweden.

Mr. **Waxman.** They are both suggesting that if you smoke it is going to be a defense against lung cancer when you work in a hazardous occupation?

Mr. **Sterling.** They have suggested that in order to explain the data which have come up now in a number of studies, that there may be a defensive mechanism involved. The defensive mechanism in case of Dr. Axelson and William Weiss was thought to be a thickening of the lung tissue or increased amount of sputum.

If you ignore such data you do so at your own loss.

Mr. **Waxman.** Do you think we should recommend it would be prudent for people who work in those factories to smoke in order to run a lesser risk of getting disease?

Mr. **Sterling.** I did not bring this up. I brought it up in answer to your question in which you said isn't it true that in certain occupations we find enhancement of lung cancers due to smoking. And my answer is no, we do not find it universally at all.

Mr. **Waxman.** I didn't say universally. Don't we find a higher number of people with lung cancer and heart disease and lung disease who are exposed not only occupationally, but increase their risk by smoking?

Mr. **Sterling.** I would think that of the studies that could be quoted studies that had looked both at the occupation and at the smoking habits of workers exposed to certain occupational risks, that the majority will show either no effect due to cigarette smoking, or will show an effect but there will probably be as many if not more that will show an increase in lung cancer among nonsmokers than that will show an increase in lung cancer among smokers. I would say this has been shown in recent studies relating to arsenic, as well as to mining, and to chloromethyl methyl ether exposure.

Mr. **Waxman**. Mr. Bliley.

Mr. **Bliley**. Thank you, Mr. Chairman.

Thank you, gentlemen, for joining us. Dr. Fisher, based on your experience of over 30 years as a pathologist, I believe you said that it might be all right to say "may" in front of these things. May cause emphysema or lung cancer. May cause heart disease. But that if we did so, we would have no more justification for doing that and if we did do it we ought to order it on a whole host of other products manufactured in the country.

Dr. **Fisher**. I think that could be done. My intent, Mr. Bliley, was that dangerous to your health. I do not know why anybody would want to commit themselves to making a firm statement about a controversial issue in general, let alone in specific. This is where I find a little difficulty.

Mr. **Bliley**. You have been in practice for 30 years, and I assume you are still active as a pathologist?

Dr. **Fisher**. Yes, sir, I am.

Mr. **Bliley**. Would the other panelists generally agree with this, with Dr. Fisher's response to my question?

Dr. **Sommers**. Yes, I generally agree.

Mr. **Bliley**. Dr. Sterling, Dr. Furst?

Mr. **Furst**. Yes.

Mr. **Bliley**. Thank you, Mr. Chairman. I have no further questions.

Mr. **Waxman**. You have been invited to participate in this hearing by the Tobacco Institute. They know of your work in this area and your views on the subject and thought it would be important for us to hear those views. May I ask whether any of you have any professional relationship with the Tobacco Institute?

Dr. **Sommers**. I do not have any.

Mr. **Waxman**. Dr. Sterling?

Mr. **Sterling**. No.

Mr. **Waxman**. The answer is no?

Dr. **Fisher**. No, sir.

Mr. **Furst**. No, sir.

Mr. **Waxman**. Were any of you compensated for your appearance here this afternoon?

Dr. **Sommers**. I have not been and do not expect to be.

Mr. **Sterling**. I would expect that my expenses and time spent in the preparation of my brief will be compensated.

Dr. **Fisher**. Yes, I have the same thing.

Mr. **Waxman**. Dr. Furst?

Mr. **Furst**. I will be compensated by the law firm that asked me to appear here today. They will compensate me for my time just as I will be compensated next week for my time by EPA, and as I was about 2 months ago by the National Bureau of Standards. As a consultant I give opinions; I do work on a time basis.

Mr. **Waxman**. You all are independent professionally from the Tobacco Institute and you are here, if you are compensated at all, as consultants to make a presentation to us?

Mr. **Furst**. Would you repeat that, sir?

Mr. **Waxman**. Pardon?

Mr. **Furst**. Would you mind repeating.

Mr. **Waxman**. I made two comments. Your professional activities are independent of the Tobacco Institute, and second, if you are being compensated at all this afternoon, you are here being compensated as consultants to present your testimony on their behalf.

Dr. **Fisher**. That would be fair.

Mr. **Furst**. Except, as I pointed out I have no contacts whatsoever with the Tobacco Institute. It was a law firm that asked me for my opinion. And they said they would compensate me for my time and my expenses for coming here.

Dr. **Sommers**. Compensation only for travel and hotel expenses.

Mr. **Waxman**. Thank you very much, gentlemen. Do you have any further questions?

Mr. **Bliley**. No further questions, Mr. Chairman.

Mr. **Waxman**. Thank you for your participation in the hearing. That concludes our business for the day.

Mr. **Bliley**. Mr. Chairman, does this conclude the hearings?

Mr. **Waxman**. Yes, it does.

Mr. **Bliley**. I have a closing satement if I might.

Mr. **Waxman**. The gentleman is recognized.

Mr. **Bliley**. I would like to say, Mr. Chairman, at the conclusion of these hearings that it has been apparent to me throughout these hearings that we are discussing two different issues. The chairman appears to be of the opinion that the proof of the success of a labeling campaign is how many people quit smoking.

However, the basis of the original law which required warning labels was not to prevent people from smoking but rather to inform the public of the suspected dangers. Based on the testimony we have heard that goal has clearly been accomplished. People clearly know the dangers associated with smoking and have freely chosen to continue. I maintain that the responsibility of Congress to inform the public has been fulfilled. The testimony we have heard shows a 90-percent awareness factor. I believe any further legislation in this area to be burdensome and unwarranted.

Thank you, Mr. Chairman.

Mr. **Waxman**. Thank you, Mr. Bliley, for expressing your views on this subject. That concludes our business. We stand adjourned.

[The letters and statements submitted for inclusion in these hearings have been printed as a separate appendix and are identified as Serial No. 97-107.]

[Whereupon at 2:50 p.m. the hearing adjourned.]

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